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AN OUTLINE FOR THE STUDY OF FRACTURES.*

By WALTER H. ALLPORT, M. D.

Brother Provincial Alexis Jansen has requested me to address you, "for one night only," on the subject of fractures. Whilst I feel highly honored by his invitation, it occurs to me that to deal with the subject of fractures on a one-night stand basis is about like trying to dip up the Atlantic with a pint cup. So that this lecture is really but an outline which may perhaps serve you a little both in your future study of the subject in books and in your emergency room and wards. We shall hardly be able to enter into any discussion of the intimate details of diagnosis or treatment; principles alone will be considered, with a few illustrations to fix certain points more firmly.

I shall divide my subject into definition; method of occurrence; symptomatology and diagnosis; principles of treatment and method of repair.

Definition: For our present purpose a fracture is any acute dissolution in the continuity of a bone, and bears about the same relation to the bony structures of the body as lacerations and incised wounds do to the soft parts.

Probably in this brief outline it would be best not to say much in regard to those curious fractures which occur as the result of some chronic process of disease in the bone itself, where the fracture occurs as a sort of incidental development in the disease. We will not dis-

*A lecture delivered to the Brothers of Saint Alexis, December 20th, at their hospital, in Chicago.

cuss fractures resulting from locomotor ataxia, osteomyelitis, sarcoma, syphilis, and the other diseases which, through softening or atrophy, produce weakness of bone. It may be mentioned in passing, however, that violence (trauma) usually plays a very minor part in the occurrence of these pathological fractures. The normal weight of the body suddenly thrown on a bone weakened by disease may cause it finally to give way; in fact I have seen the mere lifting of a thigh stump containing a cancerous femur produce a fracture. In this classification also we find many of the fractures which occur in the weak and atrophied neck of the femur of old people—the so-called intracapsular fracture—from which so few of them make a good recovery, and which is oftentimes even the cause of death in the very feeble.

For the purpose of this lecture, then, we will confine ourselves to fractures based on some form of violence suddenly applied. You will note in this definition that there is no attempt to classify violence, nor does violence have any selective action on certain tissues. Any form of violence may or may not produce a fracture, and I would therefore direct your attention toward the first practical point of my lecture: All cases which have been subjected to violence should as a method of routine service be examined carefully for evidences of fracture. It is a matter of common observation that the severest forms of violence oftentimes do not produce fractures; on the other hand, the most insignificant force, when applied in exactly the right direction, and when perhaps assisted by muscular tension, may break a bone. So that the degree of violence is not a test of the presence of fracture. For example, many of you are probably aware that the ribs are occasionally broken during the act of sneezing. I have known a man in the act of hitting a golf ball to put a spiral twist on his leg which resulted in fractures both of the tibia and fibula. Rib fractures, especially, are often the results of curious and unexpected forms of violence. It is no difficult matter to overlook a fracture underneath a point where direct violence has also cut or lacerated the tissues; such fractures are oftentimes not clear across the bone, but are as though one had taken a hammer or chisel and gouged up a piece. Again, violently strained muscles often tear up their points of bony attachment, as in some fractures of the olecranon. These illustrations should be sufficient at this point to impress you incidentally with the importance of always using the powers of observation which have been originally given you and which your training here is supposed to cultivate and render more acute. Such cultivated faculties should

assist you often in discovering fractures which may be by no means obvious. We shall have more to say of this later under the head of diagnosis.

Causes and Methods of Traumatic Fracture. Since the bones are normally the strongest parts of the body and are designed to furnish support, resistance, protection, and fixed points of attachment for muscles, it usually requires force to break them. We speak of the method of application of force as its incidence, and the point where the force is applied as the point of incidence. Thus, the incidence of the force may be directly at the point of fracture, and we say that such fractures are by direct violence. If the point of incidence of the force is at some distance from the fracture, and the force has to be transmitted through bone which remains intact, we say that such fractures are by indirect violence. This is a very important classification of the causes of fractures, as you will very readily see from examples. A man may be struck rapidly on the head by a billiard cue and his skull indented to form one of the so-called stellate fractures; this fracture is by direct violence—the violence may be said to concentrate and explode at one point. But let us say that the man instead of being struck by something becomes himself the missile—he falls from a height and lands on his head. In this case the amount of violence is massive and is equal to the often excessive weight of his body plus gravity; the product is a distributed force sufficient to produce a fracture by indirect violence at the base of the skull or in the spine; and the vault of the skull, which is broken by the short, sharp application of comparatively slight force directly applied, as in the case of the billiard cue, may escape uninjured. Fractures of this latter variety (indirect violence) are apt to occur in the leg (Pott's fracture) or thigh, when the patient falls from a height, or in the Colles' fracture of the wrist, when the patient falls on the palms of his outstretched hands. You will note, then, that direct fractures are apt to occur where the patient is struck by something, as by a rock, or falling metal, or a weapon, and that fractures by indirect violence are more apt to occur when the patient himself is the missile, and the weight of his body plus gravity constitutes the force. Fractures by direct violence are apt to crush transversely, those by indirect violence are more apt to spiral obliquely round a bone, or to split it longitudinally by a more general distribution of the force.

There is a third variety of fractures, however, which is very important, but which does not come within either of these categories,

although force, and oftentimes external force, is a part of the cause. These fractures are apt to be due to muscular, or tendinous, or ligamentous activity, associated with body weight and gravity, and the leverage of joints. This activity is usually in the form of resistance to violence, fracture occurring as the result of force applied in a certain direction with violent resistance of the muscular structures acting as an opposite force. These fractures are very interesting, and our knowledge of them has been vastly increased since the use of the X-ray. For instance, many so-called sprains are really fractures and are the result of force applied indirectly through the leverage of the joint acting through strong ligaments on the bony insertions of the ligaments. Thus the so-called Pott's fracture, which is a fracture near the ankle joint by indirect violence, is produced usually through the fall of a patient from a height on his feet. The fracture is of the fibula, with a sprain of the internal lateral ligament of the ankle—a sprain being a rupture of a ligament. Frequently, in place of the ligament being strained or sprained, the tip of the internal malleolus is broken off, because it is more brittle and breakable than the ligament itself. In this fracture, by the way, the sprain of the internal lateral ligament, or the fracture of the malleolus as just described, is made possible by the weight of the body being thrown obliquely against the external malleolus, in place of directly against the strong horizontal bearing-surface of the tibia. This fractures the fibula and tears off the internal lateral ligament.

The Colles' fracture of the radius also occurs as a result of a too strong anterior ligament of the wrist joint. The best example, however, of fracture occurring altogether by the force of violent muscular tension is in that of the patella, which is rarely broken by direct violence and never by violence transmitted through other bones. The patella is almost invariably broken by the leverage exerted by the great anterior thigh muscles pulling that bone against the articular surface of the femur as a fulcrum, the fixed point being the attachment of the ligamentum patellae to the tubercle of the tibia. Muscular fractures of the kinds just mentioned occur with the fulcrum between the power and the weight. Where the power and load are at one end and the fulcrum at the other, the result is usually a ruptured tendon or a tearing away of the bony attachment, rather than a fracture across the bone. Thus the biceps sometimes tears off the coracoid process of the ulna.

So much then, very briefly, for the manner of occurrence of

fractures—they occur through direct or indirect violence, or through indirect violence acting in conjunction with muscular or ligamentous activity.

Diagnosis and Symptomatology. Many of us have to be struck a very direct and decided blow to be awakened to the fact that our patient has a fracture. If we rest too contentedly on the assumption that fractures are obvious, we can hardly be supposed to possess any more surgical skill than is the attribute of the ordinary policeman, and all of our supposed training and experience goes for naught. If, for instance, we wait until a limb is lying at right angles to the plane of the body before we decide that the bone is broken, or if we search first and last of all for crepitus, and confine our efforts at diagnosis to pulling a patient's leg around for crepitus until he yells loud enough to waken the dead before we decide that he has a fracture, we are only doing what the man on the street could do, without bringing the poor fellow to an institution where he ought to be able to get a greater measure of scientific diagnosis without having to pay such a heavy price for it. We should learn to cultivate the finer methods of diagnosis, since these are quite as accurate and can, in the great majority of cases, be carried out without either pain or injury to the patient. These methods are based on an intelligent study of the natural history of fractures, and are classical.

Firstly, if we find in the limb a false point of motion—that is, motion which is not by any possibility a result of joint action—this false point of motion once established shows beyond the peradventure of a doubt the existence of a fracture. Where a limb is badly injured and not only the bone broken but supporting soft parts crushed, this false motion point requires no close investigation. But where the bone is the only structure injured and even that may show merely a fine line of separation and but a trifle of false movement, the case may call for close diagnosis.

Secondly, deformity, if it is acute and capable of being proved not to have heretofore existed, should make one strongly suspicious of the existence of fracture; although where either deformity or a suspected false point of motion develop around joints we have to exclude not only the various forms of dislocation, but in young persons we have to be awake to the possibilities of that form of fracture known as epiphyseal separation.

Thirdly, changes in the measurements of a limb are oftentimes quite obvious and constitute deformity; at others are so delicate that

the changes can only be brought out by the accurate and scientific use of the tape measure.

And here let me say a word as to the general practice of diagnosis as applied to fractures. No fracture is completely examined unless the limb in question has been closely compared and measured with the opposite limb; the opposite supposedly sound extremity furnishes an ever-present standard of comparison, and should be used always. In order to do this the patient should be stripped and placed on a hard table or stretcher; and this should be not the occasional but the invariable practice of nurses and internes who are called to examine ambulance cases for injuries. Most of us know of many cases of fracture which have been overlooked simply because the attendant was too negligent, or too ignorant to take off the patient's clothes and examine him carefully before he was put to bed. This is especially true of fractures involving the ribs and smaller bones, where there may not be a great deal of pain or obvious deformity. It is absolutely impossible to examine a patient as he should be examined—let us say for suspected fracture of the femur—unless he is stripped and placed on a hard table with his limbs lying in identical positions. It is also impossible to discover certain of the more collateral evidences of fracture without stripping the patient. These collateral evidences are swelling and deep ecchymosis (especially where this comes to the surface after several days). Where the skull has been injured, the scalp should be shaved, and scalp wounds enlarged and explored. Where the lower extremity has been injured, the tape measure should be used on both limbs between the normal fixed points of the anterior superior spines of the pelvis and the internal malleolus. For these measurements the eye is but a treacherous and uncertain instrument, and its exclusive use indicates either ignorance or laziness. Not only should longitudinal measurements be actually taken—as to determine fractures of the femur and humerus—but measurements of diameter and circumference are useful in determining fractures at the knee, elbow, wrist and ankle, where we suspect the upper bone has been split by the lower bone pushing upward as a wedge between two condyles. And these measurements should include an observation of any variation of the injured limb and bone from its normal line or position—the limb may show deformity in the way of an unusual angle or a twist, either condition being suspicious. These changes are described as eversion, inversion, adduction and rotation.

There are certain changes in the outlines of limbs containing

broken bones which are not necessarily deformities, and yet which are suggestive variations from the normal, and may be accurately developed when a comparison is made with the opposite limb. Such changes in contour may not be at all visible to the naked eye and may only become evident when one or more fingers of both hands are employed to identify bony landmarks which should correspond on the two limbs. For example, the elbow is frequently—and especially in children—subject to violence resulting in sprains, dislocations, fractures, or separations of the epiphyses. It is important that these conditions should be exactly identified, and oftentimes—as in children, where the parts are composed largely of cartilage—even the X-ray does not give as much assistance in the diagnosis as can be obtained through the fingers of a skilled examiner. Where the elbow is badly swollen these bony landmarks and contours are not visible to the naked eye, but can always be identified by the fingers; the important points are on the triangle formed by the tip of the olecranon process and the outer and inner condyles of the humerus. At the wrist the styloid processes of the radius and ulna are always evident and should be nearly opposite. The great trochanter of the femur can always be felt at the hip joint, and measurements can be made between it and the anterior superior spine of the ilium to show whether a fracture is above or below the trochanter. Around the shoulder we can always feel the spine of the scapula and the tip of the acromion process; and bound to the tip of the acromion anteriorly is the clavicle, to be felt throughout its entire course, and always easily examined for fracture. The ulna also is subcutaneous throughout its length; so is the tibia or shin-bone, which can be felt from the tubercle above, to which is attached the patellar tendon, to the internal malleolus below. The fibula can also be studied, but only at its upper extremity, where it terminates in a styloid process, and at its lower extremity, where it constitutes the outer malleolus supporting the ankle joint. Even the head of the radius can be felt nearly buried among the supinators, if we know where and how to look. The skilled surgeon or surgical nurse should be just as sensitive as is the artist to changes in the contour of the human form. For instance, if, on comparing the two shoulders of a patient who has sustained an injury near that joint, the injured shoulder tends to hang lower than its fellow, our suspicion should be at once aroused that the patient has either a fractured collarbone or a dislocation. Fullness at the wrist suggests Colles' fracture, rather than sprain. Where there is a fracture of the

true pelvis through the rami, this is apt to make itself manifest by a fullness in the groin on the injured side. Where there is a fracture of the femur in the vicinity of the hip joint there is considerable increase in the rounded contour of the hip; the several parts seem to bulge as though they had been pushed together in the opposite direction. Fractures of the short metacarpal and metatarsal bones are identified mostly through a study of the contour of that part of the hand or foot, since it is often difficult to elicit either crepitus, or false point of motion, or shortened measurements in such crowded quarters.

4. Pain and Disability. Continued pain, when deepseated and unrelieved, either by time or by ordinary methods, should lead one to suspect an undiscovered and unreduced fracture. This is especially true if there is considerable disability; if the patient holds the limb stiffly and refuses to use it; if the skin becomes slightly discolored by blood finding its way tardily to the surface. Where black and blue spots are due to external violence they develop almost at once, but where small blood vessels are ruptured around a broken bone fractured by indirect violence it would only be at a later date that the hemorrhage seeps to the surface.

The disability from a broken bone is usually manifested by looseness and mobility at the point of fracture. This is not always the case, however, for the disability is often of an entirely different character. For example, where the fracture is close to a joint or to the insertion of muscles, the limb instead of hanging loose may become quite rigid. Stiffness of a joint with deformity is said to be a somewhat exclusive evidence of dislocation, but in my experience it is just as frequently an evidence of fracture in the neighborhood of the joint. On the other hand, in some dislocations the joint is not rigid, as is commonly supposed to be the case. For example, a dislocated elbow is apt to be held quite loosely, especially if the ligaments are badly torn. It is a common enough experience, also, to hear patients say that they do not believe their bones are broken because they can move their fingers, or toes, or the entire limb; this, of course, is pure rubbish and has no foundation in surgical experience.

The pain which occurs in a broken limb has two characteristics; first, it is usually located exactly at the site of fracture; second, it is not present when the muscles and the limb are quiet. The pain is usually due to muscular activity grinding the broken surfaces together,

and is usually relieved by extension, or by any drug which will tend to cause muscular relaxation. The sudden knife-like pains occurring in fractures at night are due to the interruption of sleep relaxation by sudden muscular spasm.

5. *Crepitus*. *Crepitus* is a grating sensation, the result of scraping together two hard rough surfaces. The grating of fractured bones is often strong enough to be not only felt but heard. *Crepitus* varies with the amount of motion possible between the surfaces of the broken fragments. Where a fracture is impacted, that is to say, where the fragments are driven together and fixed, there is no *crepitus*. Where the bone is split longitudinally with its grain *crepitus* is sometimes difficult to elicit. But where there is enough hard surface to scrape against another surface, and where the fragments are not fixed either by impaction or by the action of other bones serving as splints, it is a symptom which is only too easy to develop. Sometimes the raw surfaces of the bone slide entirely by one another; in that case we get *crepitus* only when extension is applied to the limb. In some cases, where the fracture is a very bad one and the muscles are quite powerless to serve as temporary splints, *crepitus* is the first symptom which we notice on taking hold of the limb to examine it, but the unnecessary symptom is elicited at the expense of the patient, for he will always give a great cry of pain when the bones are roughly brought together and the muscles contract involuntarily. This symptom also appears occasionally in fracture cases at night, when, after falling asleep the muscles are relaxed; then, when the patient is suddenly wakened or dreams, their quick contraction brings the rough surfaces sharply together.

Now, since to elicit *crepitus* it is always necessary to produce pain, you will understand why I have catalogued all of the other symptoms of fracture before this one. In fact I have a strong feeling that it is hardly legitimate for a surgeon, where he has so many other good signs to depend on, to use this sign at all, unless it develops incidentally during his examination. I think it can be said without fear of contradiction that *crepitus* should never be sought until all of the other methods have been exhausted. For women, and for the many sensitive patients brought into hospitals where there are good X-ray machines, the skiagraph is far preferable. Furthermore, it is not only unnecessary, but actually dangerous, to manipulate a thigh for *crepitus* when a fracture in the neighborhood of the hip joint is supposed to have become impacted; the surgeon should depend

altogether on measurements and comparisons, rather than on the possibility of unlocking what may be a very useful impaction.

There are one or two places, however, where crepitus is almost essential to diagnosis. I refer especially to rib fractures where there is rarely any displacement or ecchymosis, and where the pain may be confused with that due to contusion of the muscles or nerves between the ribs without fracture. In certain cases, also, where there is a fracture of one of the deeply imbedded bones of the forearm or ankle, in the absence of an X-ray it may be necessary to try for crepitus before the diagnosis can be made, and it may be necessary to employ rather forcible manipulation.

In developing crepitus the fingers of both hands should be placed as closely as possible to the point of supposed fracture, and an effort made to grasp the upper and lower fragments, rather than to place the hands at some distance from one another or with possibly a joint intervening. This latter method is incorrect since it not only fails to identify the point of fracture, but the diagnosis may be clouded by the intervening joint. A fragment of muscle also sometimes interposes between the broken fragments and prevents crepitus.

There are some conditions which simulate rather closely the crepitus of broken bones. For instance, an inflamed tendon will give a sort of a harsh squeak which bears a certain resemblance to bone crepitus; but the commonest error which is made is to mistake the rubbing of the surfaces of an old rheumatic joint for the crepitus of a broken bone. It takes a good deal of experience oftentimes to decide definitely whether crepitus is in a rheumatic or gouty joint or in a fracture close to that joint. The best way to settle this point is to compare the joint in question with that of the opposite side, for joint crepitation, like rheumatic gout, is rarely confined to one side or to one joint.

6. The X-ray. I have left a mention of the most important method of diagnosing fractures until the last—even later than crepitus—because whilst the X-ray is the most positive and hence the most important method of gathering information about a fracture, it is not only not always available, but if it is used exclusively we soon lose all of the fine skill in diagnosis which is part of the education of every good surgeon and surgical attendant. I can not say too much in favor of the diagnosis of fractures by the X-ray, especially when they are taken as well as they are in this hospital, when two skiagraphs are taken through opposite planes of the body, and

when they are studied with due intelligence and due regard for other conditions existing in the soft parts, and which are not brought out by the skiagraph.

There are, however, oftentimes cases occurring where the patient is much better left undisturbed. For instance, in many fractures of the femur the patient should be gotten rapidly into one position and kept there. It is a great injury to the average patient who has sustained a fracture of the femur to be lifted out of bed to a stretcher, with the extension removed, and moved around to an X-ray room for the purpose of completing a diagnosis which could have been just as well made at the bedside.

Let me add also, briefly, but with some of my own recent experiences strongly in mind, that skiagraphs are as much for the exclusive use of the surgeon and attendants as are the hospital records. They are as much a part of the record as is the history sheet, and have no right in the hands of ignorant or malicious persons unless placed there by proper authority. A patient has no more property right in a skiagraph plate taken in a hospital than he has in a temperature chart or in a urine analysis report.

To recapitulate, the signs and symptoms which lead to the diagnosis of a fracture are: First, false point of motion; second, deformity and changes in the bony and muscular contour; third, changes in measurements; fourth, pain and disability; fifth, crepitus; sixth, the findings of the X-ray.

Principles of Treatment. 1. Reduction and Coaptation. To reduce a fracture means to draw or manipulate the fragments as well as possible into their normal position. The old idea of "reducing" or "setting" a fracture is derived from a study of the simplest and most superficial fractures. Certain comminuted fractures can hardly be "set," since it is quite impossible where much fragmentation has taken place, to draw the fragments, unless through an open wound or incision, into any normal position and keep them there. By metal plates or by wire only, can deep-seated fractures of the spine, ribs and pelvis, or shafts of the femur, fibula, radius, humerus, or small bones of the hand or foot be set and held with any degree of certainty that the reduction will be perfect and permanent. I would not have you infer from this statement that the surgeon should not endeavor in every way possible to restore the normal contour of the broken bone, but his efforts must in every case be supplemented by the subsequent work of time and nature in absorbing and rounding off those bony

projections which cannot be pushed back into place. Where the fractured bone is subcutaneous, and the fracture is not only not obscured by swelling, but is fairly transverse, and where the patient and his muscles are non-resistant, it should be possible to bring the fragments into reasonably good position and hold them there. There are in many individual cases sufficient reasons why this cannot be done; and in every case where the skin remains unbroken, by far the largest part of the actual work of uniting the fracture is done by nature. Especially is this true of oblique fractures, as of the femur, humerus, or tibia, where there is always shortening, and where usually some projecting fragment or excessive callus has to be absorbed afterwards.

It may be well to breathe a word of caution here as to excessive reliance on X-ray standards of results, and as to the too frequent use of the X-ray during the process of healing. In many cases which show satisfactory clinical end-results in measurement, function, strength, and freedom from deformity, the skiagraph shows good union to have taken place along a lateral bridge of callus. Not only is such a result above criticism, but it shows the unwisdom of interfering with fractures during callus formation because of lack of end-to-end apposition. Where skiagraphs are too frequently taken, and the limb disturbed by repeated manipulations to correct minor errors shown by the X-ray, the deposition of Nature's cement is delayed and often permanently interrupted to the ultimate detriment of the patient.

Most fractures, like most dislocations, are reduced by a combination of extension and manipulation. When the deformity and shortening are not due to comminution they are due to rotation of the limb and a sliding by of the fragments. Some shifting of position is also due to the action of muscles drawing the loose ends in the direction of the strongest pull. This shifting through muscular action occurs especially in fractures of the collarbone and inferior maxilla, and of the humerus, radius, and femur. In collarbone fractures the inner fragment is drawn up by the sternomastoid muscle; in fractures of the humerus the upper fragment is drawn out by the action of the deltoid; in fractures of the femur the upper fragment is pulled very sharply upwards by the action of the strong ilio-psoas muscle; in lower-jaw fractures the anterior fragment is pulled back and down by the hyoid muscles; and in fractures of the radius the pronators hold the fragments out of position. This mus-

cular action is usually increased by pain, so that the reduction and dressing of many fractures is best accomplished under ether. Too much cannot be said in favor of this method. In order to make sufficient extension to pull the fragments of a broken bone into position it is necessary to overcome the resistance of excited muscles. Oftentimes this resistance is very strong and increases as soon as extension is applied, so that the pain and resistance only make matters worse. Not only relief of pain but relaxation of muscles is produced by ether if it is carried to the stage of complete anaesthesia and relaxation, so that it may be laid down as a general rule that the treatment of all fractures which are badly out of place, or which are accompanied by great shortening or muscular tension, should be commenced by etherizing the patient.

2. In a large majority of patients the most difficult part of the treatment, so far as the surgeon is concerned, is the maintenance of correct position in the fragments until union can take place. So difficult is this that in many fractures, such as those of the collarbone and radius, we have come to look normally for a certain amount of visible deformity in the result.

There are certain principles, however, governing the maintenance of position which are so well established and so definite that they have come to be regarded as classical, and the correct application of them to all forms of fracture will carry the surgical attendant and his patient a long way toward a satisfactory result. These principles are as follows:

(a) The surgical attendant should aim to place not only the fractured bone, but the entire extremity, in a state of physiological rest.

All of Nature's processes of growth, and especially her methods of repair, are based on the principle of Rest, and are almost directly comparable to the process by which ice is deposited on the surface of a pool. It is a well known fact that ice forms best on quiet surfaces—that where water is disturbed ice-formation is delayed or prevented. Thus, even in the depth of winter, one may find rapidly running streams still uncovered, and the same delay or failure occurs in the deposition of callus and lime about a fractured bone which is not put to rest.

But a certain amount of inflammatory exudate around the broken ends, usually produced by the trauma, is essential to union, and where the fracture is a very quiet one union may fail through lack of inflam-

matory reaction. This exudate is called provisional callus, and in it later on are deposited bone cells and lime salts to produce a permanent or definitive callus. A healthy and normal inflammatory reaction is evident when we study the temperature and blood count of most patients who are repairing fractures. In many cases we find a temperature and leucocytosis as high as 101 in the afternoon, with 15,000 to 18,000 leucocytes.

In another way does bone repair after fractures correspond to the deposition of ice on a pool. It will be noticed that even on an unquiet pool ice will still form by successive deposits along the edges if the weather is cold enough. This is true also of the deposition of bone; lime and bone cells are formed, although slowly, even when a bone is not kept at rest, but in these cases is not only much unnecessary bone formed—corresponding to the great mountains of ice which we sometimes see on the shores of an unquiet lake—but this deposition occurs by the pushing out, from each piece of broken bone, of bone cells and salts; these knobs finally coalesce into a sort of mortar or putty which slowly hardens. A grasp of these few simply stated facts in regard to the method of repair would seem to be quite essential for your intelligent comprehension of the reasons for the necessity of physiological rest in the treatment of fractures.

Rest means that the limb shall be placed, first of all, in a comfortable position with the joints not too much flexed or extended, and with the muscles well relaxed or balanced, so that there shall be no undue tension on the fragments of the broken bone. Almost all of the devices outside of lateral splints and plaster of paris that are now in use in the treatment of fractures are intended to bring about, in a scientific way, these conditions of rest and balance. For example, the triangular pad, which is often placed in the axilla to push out the lower fragment of a humerus which is fractured just below the deltoid muscles, is placed there to balance the upward pull of the deltoid on the upper fragment. The Hodgen splint, by which the lower extremity is slung and extended at the same time, is used to overcome the upward pull of the ilio-psoas muscle on the upper fragment of a fractured femur. This object is also accomplished by the railroad splint and double inclined plane which are used frequently in this hospital in the treatment of fractured femurs.

Rest means also a well-balanced circulation. This is to be secured by even bandaging assisted by gravity. So far as possible the injured limb, especially during the stage of exudation, should be

elevated. For this reason a patient with a fractured lower extremity should, during the first ten days after the fracture, be kept in bed with the limb raised, so that the ordinarily benign exudate may not become excessive and actually obstruct the circulation. Fractures of the upper extremities should be carried well elevated in a sling, with the joints semi-flexed to secure the best return circulation. The fingers and toes should be carefully inspected from time to time to see that they are warm, movable, of a good color, and not too much swollen.

If these measures are properly carried out, in cases which have been subjected to a moderate amount of violence, the pain and swelling soon subside, the circulation equalizes itself, and repair goes on rapidly.

(b) The fracture should be immobilized. This means not only that the fragments themselves should be held firmly in position by short coaptation splints, as for example, in fractures of the thigh, arm, and forearm bones, but that the action of muscles which tend to draw the fragments apart should be studied, and an effort made to bring about their complete balance, by relaxation, position, or compresses. This is often a difficult enough matter and results show that in some cases it may not be altogether possible, but the action of muscles must be studied intelligently in every individual case.

Perfect immobilization means not only that the ends of the fragments should be splinted together in some way, but that the entire bone should be kept rigid and at rest. This can only be accomplished by immobilization of the joints proximal and distal to the fracture. This is one of the most important principles of fracture-surgery and was laid down so many years ago that the name of its first discoverer is lost in antiquity. It is to carry out this principle of immobilization of proximal and distal joints—and with these joints the entire fractured bone—that we use the long side splint in the treatment of fractured femurs by the Hamilton method. For this reason also should the plaster of paris be carried below the ankle and above the knee in the treatment of broken legs; and for this reason we treat a fractured humerus by reinforcing the splints with the three rollers of Desault—thus immobilizing the elbow and shoulder. Oftentimes this principle may be negligible without injury to the patient, providing the fracture is very close to one joint. Thus in a fracture very close to the ankle the motion at the knee may not have to be restricted, and the same is perhaps true of fractures which are close to the wrist or elbow joints. Nevertheless the principle must be vigilantly borne

in mind and always taken into account. Sometimes it is impossible to secure this complete immobilization, either at the point of fracture or at the proximal and distal joints—the patient suffers accordingly, not only through pain and delayed union, but also in subsequent deformity. This is usually true of fractures of the ribs and collarbone, and is not infrequently the case in fractures of the scapula, lower jaw, and of the neck of the femur.

(c) In fractures which tend to override, the reduction of the fragments should be made as permanent as possible, not only by primary extension and reduction under ether, but by some form of permanent extension, so that the fragments may be drawn into the best attainable apposition and held there. It is only by permanent extension that shortening is prevented. Although shortening is not a desirable result after fractures, as a matter of fact it occurs almost invariably when the fracture is across the entire bony support of a limb. Such shortening, unless it is extreme, is a negligible quantity in the upper extremity, provided the result gives a limb which is strong, functional and undeformed. In the lower extremity any shortening beyond three-fourths of an inch may be considered excessive and to be accounted for, since shortening in excess of three-fourths of an inch is bound to produce a permanent and noticeable limp.

Extension is secured by a variety of devices, the application of which requires a large degree of tact, natural skill, and acquired experience. Many of our older brothers have a justly merited reputation for proficiency in this direction. Extension is by three methods, and we have only time to mention the principles involved, without going into close details as to the how these principles are carried out. First, permanent extension of the limb is secured in the lower extremity by what is known as Buck's extension. Here the patient lies in bed and with strong adhesive plaster attachments the entire limb is extended in its natural axis by a weight and pulley carried through the foot of the bed. Counter-extension is usually practiced by elevating the foot of the bed and allowing the weight of the body to pull against the weight and pulley. This principle is employed also in many fractures of the upper extremity and of the small bones of the hand or foot. Second, extension is practiced by the use of plaster of paris or lateral splints bound firmly around a fractured limb, whilst manual extension is being made on the distal end of the limb. Sufficient resistance is made by the natural prominences at the joints

above and below the fracture to hold the limb in extension after the plaster of paris or splints are applied. This method is especially to be commended in the treatment of fractures of the leg and wrist. Third, the leverage of the sound bones lying proximal or distal to the broken bone is used to pry the fracture into extension and to keep it there. This method is especially valuable in the treatment of a broken collar-bone.

Now, in conclusion, let me recommend that you try to master first the principles briefly outlined in this lecture, and after having done so, watch the practical details of diagnosis and treatment as they are worked out in your wards. I think you will find that I have given you, though briefly, an epitome of non-operative fracture-practice as it exists today in our best modern hospitals.

DR. JAMES S. JEWELL
(1837-1887)

**BOYHOOD IN ILLINOIS IN THE FOURTH AND FIFTH DECADES OF THE
PAST CENTURY.**

By BAYARD HOLMES, M. D., CHICAGO.

James S. Jewell was born in the neighborhood of Galena, Joe Daviess County, on September 8th, 1837. We will pass over his childhood and consider only his education during adolescence.

The conditions of life seventy years ago in the farming districts of Illinois are very hard for us to realize who pass over the same ground in luxurious motor cars or in the electric-lighted railway trains or interurbans. The intellectual and moral conditions, however, were equally different from those that possess us. There was the greatest dearth of education aids, but there was a hunger and thirst for knowledge and intellectual endeavor among the young people which we rarely observe now, save occasionally in the children of the slums in our great cities.

Let us attempt to put together in a continuous narrative from the scant material to be found in letters, diaries and tradition, such information as is left to us by the ravages of time in spite of our neglect of any serious consideration of our predecessors.

Among Dr. Jewell's papers was a partial list of the books which he read in his teens. It was remarkable for the number of classics, the preponderance of religious books and books relating to the history of the Jews and of their neighbors, for classical biographies, and for the scientific books of the time, especially for those relating to geology and anthropologic researches among the Asiatics and the savage races. It will be remembered that the scientific spirit was just reaching down to the general reader. Geology had become a science and had aroused the antagonism of the ecclesiastics. The cuniform inscriptions and monuments were deciphered and published during the forties and the great analytical study of botany, zoölogy and geology was at its height and appearing in readable monographs. All in all, it was a period of accelerated intellectual curiosity throughout the western world. The intense religious convictions which brought the Colonists to New England had not yet been displaced in their descendants by the agnosticism of the scientific period, nor by the atheism of modern commercial life.

The home upon the prairie farm was a very cheerless place for the children. The domestic equipment was crude and primitive com-

pared with that of the same farm houses today. Candles furnished the light; the kitchen stove, which was a spider-like contrivance with an elevated oven, the heat. The log houses were narrow and dark; the frame houses were cold and rickety. The well was far from the house and water was unknown in larger quantities than the pail-full. In the summer time a rain-barrel stood at the corner of the house with a warped board slanting up to the eaves to deflect the storm water into it. Nearby was the woodpile, and behind the house the privy, the smoke house, made of sod or stone, and the inverted, pyramid-like lye leach with the wooden trough at the apex, collecting the lye into an iron kettle of 40 gallons or more. This kettle was used for scalding hogs and for making soap. To one side was the straw-roofed sheds in lieu of barns and the barn yard and pig pens.

The household linen was home-spun and home-woven and, in Illinois, it had generally come with the family from the east. The cupboards were usually full of blue china, steel knives and two-tined steel forks with deer horn handles, firmly attached with steel caps on the ends. The molasses pitcher was full of New Orleans molasses and the sugar bowl of muscovada sugar. The flour barrel was full of flour ground at the nearby mill on imported French flint mill stones and bolted into three parts. The bran was fed to the chickens and shorts were used for medicine or for breakfast gems. Every house had its rifle and shot gun, both muzzle loading and requiring uncertain little brass caps to set them off. The Bible was always in evidence and in Joe Daviess County in the forties a large number of books on mining and the new sciences of geology and minerology. The larger part of the 20,000 tons of lead produced in the United States came from the region of Galena. It was a large factor in the settlement of the country and in furnishing a market for the surrounding farming community. Zinc was not produced in that region until later. (Pulsifer.) The Jewell family had come from Tennessee and must have had a considerable library. Some of the authors were recent at the time, especially on the sciences.

James Jewell was never "Jimmie" although he had brothers and sisters. He learned the alphabet when two years old and could read at four and had at that time made great progress in geography and history. He had read several biographies, among them Fox's Martyrs. His mother and the older children must have been guilty of this precocity as his father was away from home much of the time. He worked in Galena, twenty miles away, and at the new mines that were building with the crude smelters and reducers. Like

most mechanics, at the time, he did all sorts of iron and wood work indiscriminately and even the necessary mason work to set up a stationary boiler and engine.

There were no free schools in Illinois at that time and a good teacher could not be secured except in the cities and towns or in the more wealthy neighborhoods in the country, hence many who came to Illinois in those days were obliged to educate their children at home or send them to some more favored locality and pay their board as well as tuition. Thus far James had been educated at home.

About this time (1842) a little log school house was erected about one mile from the Jewell farm, on Rush creek, at the north edge of Jewell's Prairie, about five miles northeast of Elizabeth in Joe Daviess County. The school house was called the "Lanphier school house" and was the only one about the Prairie for many years. It was the preaching place, Sunday school room and place of public gathering for the people for miles around. In this school house, James received his first instruction from a "School Master," Mr. A. C. Perry, who had been employed to teach four month's school, beginning about the first of January, 1843. James was then in his sixth year. Mr. Perry was a well-informed man, who had come west to see the country and gather information about that famous mining district. He had been educated in Boston, Mass., and was something of an elocutionist.

In order to secure the services of a good teacher, the more responsible patrons obligated themselves to pay the teacher for the full term, whether the subscription was all collected or not. James' father was one of four who guaranteed the teacher's pay. According to the contract the teacher was obliged to board around, as was the custom in those days. The school was composed of pupils from five to twenty years of age and very few of them had ever attended school before in their lives. James went to school on the first day, early in January, 1843, soon after he was six years old. The teacher apparently took quite a fancy to him because he was orderly, and prompt in reciting his lessons and because he could spell and read as well as any pupil in the school and knew a great deal more about geography and history than any of them.

Mr. Jewell's father was a genial, social, well-informed and very generous man, a fine mechanic and he made the teacher feel very much at home at his house. The result was that he stayed there most of the winter and devoted a considerable part of his time to

teaching the members of the family and especially in training James in elocution. This was done in order to prepare him for an exhibition at the end of the term.

The last six weeks of the school term other students and several young people from the neighborhood who did not attend the school, came into Mr. Jewell's house almost every night to practice for the exhibition. The effect on James was very remarkable. He was not only greatly impressed with the importance of a proper modulation of the voice, but he appeared to imbibe a large share of Mr. Perry's instruction in expression to the older and more mature students. It became his desire to read and speak as well as Mr. Perry. This added another impulse to his impetuous mind and he never had to be driven to his book after that winter.

The term ended in fine shape; many were present from a distance. Galena, twenty miles away, sent quite a delegation. James spoke well, obtained good attention and more applause than any one else. This, Mr. Perry had foreseen, but he had not foreseen that some of his patrons might be made jealous and slow to pay. They were free to admit that Mr. Perry had taught a good school, worth the money, yet they could not pay him just then. This left him to call upon the four men who had guaranteed the subscription. Three of these backed out, so to speak, and left Mr. Jewell to pay nearly all of the expenses of the term. Add to this fact that Mr. Jewell had boarded the teacher a large part of the term and had sent only one pupil while others, who were as well able to pay as himself, had sent several, and few will be surprised to learn that Mr. Jewell vowed that he never would subscribe to another school, while he lived on that prairie. This Mr. Jewell vowed and he kept his vow.

From that time on, while the family lived near Elizabeth, there was no school in that vicinity, except for a few months in the summer of 1848, when Miss Aseneth Wells taught a summer term, to which James did not go.

Mr. Jewell was a machinist and was away from home most of the time, and it was necessary for James to work on the farm in summer and in the winter provide wood and look after the stock or assist the hired man to do so. Home teaching became a necessity under such circumstances. The above are the circumstances under which James' mother became his teacher and he had no other until he reached his sixteenth year.

In the fall of 1850 Mr. Jewell concluded to sell his farm in Joe Daviess and move to the southern part of the state. To this Mrs.

Jewell gladly consented, as the family at that time consisted of three boys and five girls. To educate so many at home and look after their other wants was more than limited means and ordinary strength could reasonably expect to accomplish.

In the spring of 1851 the family moved to "Egypt"—as the southern part of the state was called and settled in Williamson County about twelve miles east of Marion.

This rugged county was new and for the most part covered with a heavy growth of timber. The underlying coal was then undiscovered. To make a farm in heavy timber means hard work, with but little time, except by lamp light, for mental culture. The farm was on hilly ground 500 feet above sea level. The creek which passed through the Jewell farm was very appropriately named "Brushy Creek," and flowed southeasterly into the Saline river and thence into the Ohio. There was no end to the grubs and stumps to be dug or burnt out or worked around. Stumps were not pulled much in those days, and dynamite was unknown.

Here James spent the years 1851, 1852 and the summer of 1853. The winter of 1853 a free school was taught a few miles away, in an old church, called Zion. Alfred Pease was the teacher, a well-informed New York gentleman, who had settled near the church. James found a place near the school, where a farmer consented to board him for what he could do evenings and in the morning, outside of school hours. His sister, a year and a half younger, attended the same school, but boarded at another place. Times being financially hard, the family was unable to pay her board that winter and care for the other children, so James paid it by work on Saturday. Thus it will be seen that he had no idle time that winter.

The following summer he spent on the farm. The winter of 1854-5 young Jewell attended school at the same place; Alfred Pease was the teacher that winter, also. James was unable to complete the term, matters at home demanding his attention toward the end of the fifth month. These five months, and about five and a half the previous winter, with the four months of 1843 in his sixth year, in all less than fifteen months, was all the schooling James Stewart Jewell received, apart from his medical college courses.

The fall of 1855 he began the study of medicine, under the preceptorship of Dr. S. M. Mitchell, of Corinth, Williamson county, but continued with unabated energy the literary and scientific studies mapped out in his earlier life.

It was Dr. Jewell's opinion in after life that his school education

had next to nothing to do with his mental development, as his methods of study and investigation, developed outside of school, were carried with him into the school.

The education of the country boy is always a matter of "faculty" rather than attainment, but the Jewell boy had an unusual home training in reading, spelling, composition and in general literature.

In addition to the ordinary school text books of the time, James found in the home library as soon as he was able to read, works on philosophy, logic, ancient and modern history, ancient geography, astronomy and religion, with a few poetical works and a number of biographies, but no works which purported to be works of fiction.

From six to twelve years of age, James' stronger passion was for history, geography and topography. The relatively uneven county in which he lived led to the latter. At that age he had made himself familiar with everything on these lines about the house. He took more delight in ancient history, in his childhood, than in modern history. Its heroes, demi-gods and great cities fascinated him. He would read their history at all times of the day and night when not obliged to work or sleep, and recite the more wonderful parts to his mother when at work in the garden or assisting her about the house. He admired most of all the Greeks, next the Egyptians, but among the more modern, the Romans.

The habit of reciting or recounting the incidents he had read grew upon him. He thought he was reciting facts that he had obtained from the author, but he was more likely recounting the fancies aroused in him by his reading, and these ideas were greatly changed by the background of his imagination, his social and philosophical ideas and the religious surroundings in which he had always been brought up. Instead of Brushy Creek in Williamson county, Illinois, U. S. A., he lived in the Valley of the Jordan, from which he traveled in his imagination in all directions, following Joseph into Egypt, the retinue of the Queen of Sheba into southern Arabia, mixing with the captives of Nebuchadnezzar on their way into Babylon, following Paul not so far off on the road to Damascus, and afterwards listening to him on Mars Hill and meeting him in the Appian Way and going with him back to Rome, traveling with Hannibal from Carthage to Spain over the Alps and down to Rome again. The Catacombs were more familiar to him than the tubes of London to the average English boy of the day. But he was not religious or pious, as it was termed at the time.

Most of his pictures and ideas were, to be sure, fictions of the

flimsiest sort, perverted by his distinctly provincial background. They took direction from the prevailing narrowness of the scholarship of the time, before the higher criticism had a name and before Darwin has published "The Origin of Species." The value of his reading rested not alone in knowledge, but in the fact that these ideas and ideals possessed him. He thought of nothing, talked of nothing, but the heroes of the past, the heroes of his reading and imagination.

We have no Sundays in the country any more, Sundays of quiet mornings with all the family in clean clothes, few chores to do and the quiet, ceremonial breakfast; then a day of undisturbed repose except the leisurely stroll to a neighbor's pasture to see a new foal or in midsummer a book and lounging place under some wide-spreading tree, open to the balmy south wind. The boys who might have been our grandfathers, and this precocious Jewell boy with them, often came together by a sort of anti-heliotropism and stretched themselves in the attitude of ostentatious leisure in the shade of some slightly linden. There they forgot the week's sturdy and exacting labors, such labors as our modern country boys have never known. It is a very distant and secluded farming community, indeed, that does not nowadays hear the puffing and honking of the motor car early Sunday morning and see the flaming lights of belated joy riders late Sunday nights, but in this sparsely cleared forest of Williamson county in 1853-5, no traveler or hunter disturbed the well-earned Sunday silence.

On the bluff of Bushy Creek, a nice walk from the Jewell house, there stood a big tulip tree with roots stretched protectingly over an ancient Indian burial mound. The massive trunk had half a century before been greatly deformed by lightning, but it was mercifully spared, perhaps on account of its association, by the axe of the clearer. The mystery of the mound, the woeful aspect of the deformed giant of trees, the bounteous fragrance of the tulip blossoms in their season and the constant elegance of its foliage, and the luxuriance of its shade, fascinated the imagination of the boys of the neighborhood and made this outlook to the southeast over the valley of the Saline a rendezvous and trysting place such as country boys alone conceive of.

Here James took his books, and here he met the other boys who gathered round to hear him read some startling tale of ancient lore, the expeditions of Alexander, the retreat of Xenophon with the ten thousand, the struggles between the Persians and the Greeks, and

conquests of Caesar and Ptolemy, not to mention the less bloody conquests by the discovery of the compass, the sextant and the chronometer, by the production of printed books, by the use of steam as a generator of power and locomotion, and the recently realized use of electricity for telegraphy (1847). It was not only on Sundays in daylight and warmth that this alert boy told of his scientific romances.

The hills and woods on the watershed between the Mississippi and the Ohio were full of game. Raccoons, opossums, wild cats, woodchucks, squirrels and game birds were abundant, and in the autumn after the harvest was over and the nights cool and crisp the "coon hunt" was a manly sport of the boys. The brush was stalked with dogs and guns and the coon treed and either smoked out or shot out by fire light. This was kept up until the hour set for the end of the hunt and then the knapsack lunch was eaten round the bonfire and washed down with cider. The men and boys, satisfied with bread, smoked ham and cider, and warmed by the hunt and the bonfire, called for some old story of adventure or conquest of the boy Homer. They recalled afterwards how often young Jewell protested that he would some day go up the Nile, pass through the Red Sea, cross the desert and the valley of the Euphrates, and walk the streets of Rome and Athens. The stories of the Medes, the Persians, the Assyrians, the Baylonians, the Greeks, the Carthaginians and the Mahommedans of Asia, Africa and Spain were the romances of those camp fires, and the every-day talk of that isolated provincial and impoverished community in our modern "Egypt."

In the spring, after the logging of the previous fall and winter, when the grubbing of the spring was well along, and after the new verdure had begun to assert itself, the brush heaps and log heaps were burned during the balmy nights. To secure the complete clearing of the ground, no logs could be left half-burned, and they must be skidded together frequently during the night and, moreover, in very dry times, the spread of fire must be prevented. A bunch of boys would stay out together, with blankets to keep them warm, and keep one another company, and if they fell asleep wake one another up every hour or two to roll the burning logs together. These occasions were times for the recital of the stories of the burning of Rome and Alexandria, the destruction of Babylon, and the plague and fire which overtook London in the seventeenth century.

When James S. Jewell was eighteen years old, in the fall of 1855, he began the study of medicine in the office of Dr. S. M. Mitch-

ell in Corinth. He had been in attendance on school taught by two male teachers for less than fifteen months. He wrote well, spelled as perfectly as possible, and used good English, probably as good as he ever did afterward. He had a great fund of exact general information. He had a moderate knowledge of arithmetic but no other mathematics, not even geometry. He read no modern language and had the merest smattering of Latin. So far as we can discover he did not think a reading knowledge of foreign languages necessary to scholarship.

He showed afterwards a remarkable facility in learning to read the languages of Europe and Asia, where his historical interests always centered.

It is little wonder that his mind was attracted to medicine. The southern part of Illinois was always subject to malaria and mosquito bars were unknown. He, with nearly every other pioneer, had malaria regularly every summer or fall. Yellow fever came up the Mississippi and was epidemic in "Egypt" in 1852-5. A large number of workmen on the Illinois Central Railway died of cholera in 1855 and for several years it was almost epidemic in the Mississippi valley.

It was after such an education and at such a time that this frail, nervous boy began the study of medicine in the most benighted part of the state, and in less than thirty-five years he died after an honorable service to the profession and an unflagging devotion to his patients and left a polyglot library of science in medicine which became the first and will ever be a conspicuous part of the incunabula medicae of the Crerar library.

THE ORGANIZATION OF A MEDICAL SCIENCE ROOM IN A PUBLIC LIBRARY.

On Wednesday evening, January 3, 1912, a medical science room at the Evanston Public Library was formally opened and presented to the library by the donors. It was founded in honor of Dr. Edward H. Webster and contains the Walter S. Christopher library, endowed; the Sarah H. Brayton collection, endowed; and the Edward H. Webster library, endowed. Dr. Will Walter, as trustee for the funds which had been collected for the endowments, made the presentation, which was accepted by Mr. R. C. Lake on behalf of the library directors. Dr. D. P. MacMillan talked briefly on the work of Dr. Christopher, and Dr. W. T. McElveen and Dr. Frank Billings paid tribute to Dr. Webster.

PRESENTATION ADDRESS.

(BY DR. WILL WALTER.)

It becomes our duty as voluntary trustee of your funds to report to you on this occasion, which I do formally hereby. But I will not burden the time with a recital of the details of my trusteeship, as they will be published in the annual report of the Evanston public library. We wish merely to make the report in gross, which is as follows:

The work of establishing this foundation, that is the perpetuation of a medical library section in this building, represents a work of three years. The resolutions of the Evanston public library under which the medical science room is organized provided that the room should be known as the medical science room, founded in honor of Dr. E. H. Webster, whose friends were to furnish funds for an endowment of a library of not less than \$3,000, the revenue therefrom to be used for the purchase of magazines and books on the subject of general medicine and surgery and the upkeep of the same. They provided also that the room itself should carry an endowment for its upkeep of not less than \$1,500, the income of this to be used for the payment of such items as lighting, telephone reports, replacements, etc., and anything left over to be used toward the binding of books and magazines. And also provided that the friends of Dr. Webster should completely furnish the room.

Under this plan, which was accepted, any other libraries could be installed in this room, and the first of these organized was the

Walter S. Christopher library on the diseases, growth and development of children—to which object Dr. Christopher had given his life, and whose library Mrs. Christopher had given me for disposal. His friends contributed \$1,000 for this, the revenue to be used for the purchase of literature in this line.

Friends of Dr. Brayton also volunteered to put in an endowment, the revenue of which was to purchase books and magazines on diseases of women; and when the space was allotted the physicians of Evanston who were organized under the head of Medical Science Library Association, turned in what they had accumulated, which included a large number of new books which the late Mr. C. J. Morse had donated and which then became a part of the Brayton collection at his suggestion.

This, therefore, constitutes the library as it now exists.

At the time of the acceptance of the plan we had collected for the total Webster donations approximately \$6,000 from 212 donors, and had expended a considerable sum for the upkeep of the library during the time we were raising the funds for its completion. So that with the endowments completed we would have left about \$1,000 for the furnishings. It soon became apparent that if we wished to furnish it as it should be done, it would cost something like \$1,500 more.

Accordingly, as the money had not been raised, this amount was kept out of the funds turned in to the library for investment. In other words, we borrowed from the funds to complete the furnishings and the upkeep of the library in the interim, so that when the invitations were sent out for the opening we were obliged to acknowledge an indebtedness of \$1,500 on the whole library.

The full list of the donors may be seen on the table in the library room. Space is provided at the bottom of each fund for such additional subscriptions as you may wish to make, as you would not feel that any meeting like this had been complete without your being asked to give something; the shock might be too great.

We appreciate that for obvious reasons we have not been able to reach a tithe of the friends and patients of those to whose honor these funds have been given and who will want to be upon the roll of honor. The lists are still open, however, and the funds received will be turned in to pay the indebtedness until it is settled, after which they will be added to the endowments.

The revenue for purchase and upkeep of magazines and books will under the present endowment be something over \$300 per year.

The Evanston library stands alone in this country from the fact that it devotes part of its space to public service through at least two subsidiary libraries. It has had in successful operation now for some time the first music library, I believe, ever installed in a public library, with facilities for the study not only of the masters of music but of the music itself, this through the generosity of Professor Coe.

This occasion, the dedication of a medical library as an intrinsic part of the Evanston public library, is unique because it is the first of its type, both as to its being part of the public library and the manner of its foundation. And this method of organization may serve as an inspiration and a type for small cities to follow to aid their medical advisers in the preservation of health and the relief of suffering.

There are very few medical libraries in America. While some of you have donated to the foundation of this through gratitude for services and others through personal feelings of admiration for those honored by the donation, all have consciously or unconsciously aided in a great cause and perpetuated a public service organization by doing it.

It is given to few to meet disease or suffering without fears as to the outcome, for the instinct of self preservation has its full unfolding in that hour, and the hope of the resurrection is the same instinct carried over the border. Ignorance of the possibilities and inability to know forces the layman to accept with faith the help of him who is trained for this service. Your calls upon your physician are irregular in nature, imperious and uncompromising as to demands. Your physician is engaged in a science whose progress is so rapid and whose literature is so crowded with experiences, that the work of yesterday is obsolete tomorrow. Their modern armament becomes old in a few weeks. You are therefore vitally interested in the upkeep of your physician. You are interested in his financial upkeep, too, if he is to attend the medical conventions, those clearing houses of medical knowledge;—and perforce he must also occasionally go back to school to work. These things you will, I know, bear in mind when next you receive from him a memo of indebtedness. But if you would have the best service for yourself and your kin, it must be through a combination of your physician's own experience in practice added to that of all other men in his field.

Know you then that the ethics of medicine are the ethics of Christ himself! For a physician to be ethical must tell his confreres—who are, indeed, also his competitors—what his latest and best

results have been and how accomplished. The discovery of one man is the property of all, and through the literature is distributed forthwith to all men in the world working in that field. And have you realized that no profession but the medical is devoting all of its energies to destroying the need for its very existence?

Men of medicine have gone forth to conquer diseases such as yellow and other tropical fevers, and in laboratory work have died vicariously. So died Dr. Christopher, whom dead you honor tonight—doing the physical deeds of a giant in ceaseless toil by day and pursuing the mental tasks of a savant at night, burning his candle at both ends, which, indeed, he had to do if, doing the physical labor demanded of him today he still must keep himself prepared for the problems of tomorrow.

I say to you that working for the pure water supply of cities, for the prevention of typhoid and bowel disorders, for pure air in the schools and in the workshop to prevent pulmonary disease—fumi-gating, sterilizing and working for the perfection of sanitation, for the care of eyes and teeth and for preventive medicine in all forms, medicine is itself going to a vicarious death. It is not immediate but, in blunt words, the physician is working his head off to cut off his bread supply. And he is proud of it! Libraries such as this help him in his task of "self destruction."

He has not the time nor the money to collect the books and magazines he needs, neither the ability to select that which is best. Such a plan as this, therefore, economizes the time for him as well as the expense, and the various plates and reference books could not by any chance be the property of any man in practice.

Having it furnished for you, medical men, it becomes alike your duty to employ it and that of your clientele to allow you the time to do so. It will be better for you and of greater advantage to your patients if each day you take from your time some little period for contemplative study within these walls.

In time, under the plan of its management, there will be as good a collection here as the profession needs, and the plan is so broad that when it later becomes the desire of a grateful public or a satisfied patient to perpetuate another name, whether it be a physician or layman, a section may be endowed as these have been, and thus memories or deeds commemorated and the world made better by the inspiration of lives lived or deaths died.

I beg, therefore, to present to you, Mr. President, who are acting for the trustees of the Evanston public library, my complete

reports of this fund, in which will be found waivers of lien upon and the property which has been placed herein, and to hand you drafts for the balance of the fund which we have on hand. And I beg to tender you this, on behalf of the donors, to establish the above named library, the funds of which are to be expended in the manner above cited.

In addition to this formal report, I would like to publicly acknowledge the generous spirit in which these gifts have been made.

It having been my privilege to thus address you this evening on what your generosity has made possible, I must say as Oliver Wendell Holmes said on the opening of one of the first, if not the first medical science library in America, that "no one can bring his tribute of words into the presence of great deeds, or try with them to embellish the memory of any inspiring achievement without feeling and leaving with others a sense of their insufficiency."

WEBSTER THE MAN.

(REV. W. T. McELVERN.)

"I have been asked to speak for ten minutes on Dr. Webster, the man; rather a big text for so short a sermon. If I had even as much gray matter on the inside of my head as Dr. Webster has on the outside of his I could compress all that I want to say into ten minutes. I need tonight to have as fine terminal facilities as the Northwestern Railroad. So I will get at my task at once. Henry Drummond said of his friend, Dwight L. Moody, that he was the "biggest human" he had ever met. Dr. Webster is the biggest human I've ever met. While his personality is too large and too many-sided to be described in one word, that word, MAN, written in big capital letters, is the only word that would come anywhere near describing him. You have heard, perhaps, of the individual who began his business career as a man and ended it as a groceryman. Dr. Webster's professional work has not narrowed or limited his manhood; it has rather given his opulent manhood the opportunity for finest growth and for fullest expression. He is a man—every inch a man. An honest man is the noblest work of God. Our beloved physician is a great, radiant, earnest, useful man.

"A hearty man; a friendly man; a brotherly man; a man who gives more real joy with his gladsome greeting and his cordial hand-clasp than any man could give us with a learned and clever dissertation. This old world of ours needs warming up. And for this

purpose a handful of kindling wood will do infinitely more than a wagon load of ice. There is nothing suggestive of an ice wagon about Dr. Webster. Dr. Webster does brace one like a cold, wintry day, but his nature is ever summerish. He doesn't talk much about love, yet he is a loving and lovable man. He has a cool head and a warm heart. Thoroughgoing thinking does not exclude deep warm feeling. Feelings rather than thinkings are the equation of a man. The Great Book that Dr. Webster quotes so frequently and some times quotes incorrectly declares that "out of the heart are the issues of life." It is out of his great, warm heart that have issued the loves and the loyalties; the services and the sacrifices that make us rejoice to call him our friend, and that lead us to honor him tonight. I have heard people say he was a diamond in the rough. He is a diamond all right. I know him, and he is one of the tenderest, gentlest, kindest men that ever breathed. We have some big-hearted men in this town, but he is the biggest hearted of them all. Roughness may incase the diamond, but it is only Dr. Webster's way of concealing the warmth of his heart.

A resourceful man; a versatile man; a man with reserve power, and seemingly inexhaustible patience. Dr. Billings will tell of his active, nimble mind, and of his skill and faithfulness as a practitioner. I recall a terrible night at our fine little hospital on Ridge avenue. My wife was sick; seriously sick. The superintendent said she couldn't live and advised me to telegraph her people. But, said I, "Dr. Webster hasn't given up hope, and my hopes are fixed in him." Then the superintendent sent for Mr. Frank Elliott, and he, at her request, begged me to prepare for the worst. But Dr. Webster came along and patted me like a big brother upon the shoulder, and confidently said, "Keep up heart, old man; we have six more ditches to defend, and we'll fight like ———"; never mind his analogy. A devoted friend of Dr. Webster's said he would rather hear him swear than hear most preachers pray. That night I understood what my friend meant. His swearing was sweet music to my ears. Well, he fought that battle, and as in so many other instances, he won. Dr. Webster knows how to convert seemingly inevitable defeat into victory. He never surrenders until he is driven out of the last ditch. You need to be real sick to get Dr. Webster's loving heart and agile mind really interested in you. If you just have a petty pain he very likely laughs you out of it. But if you are in danger you can depend upon him. He is Edward on the spot. And he stays until he wins.

An optimistic man; a man of hope and faith. His very presence has therapeutic value. Dr. Webster, I need hardly tell you, isn't pious but he knows the value of faith—faith in God. A friend of mine was recovering from a severe attack of appendicitis. Dr. Webster asked her how she felt. She answered: "I'm all right now, thank the Lord—and you." Whereupon Dr. Webster said: "Oh, we're a great team." Sometimes he acts like a big kid, and sometimes he acts like the old boy, but his exuberance is better than medicine. His joy is contagious and healing.

"A genuine man; a reliable man; a man that it is always safe to tie to, and a man that is always safe to build upon. There is nothing artificial about him. There are no zigzags in his thinking and no circumlocution in his speech. He says what he means and he means what he says. He is real and true. If he doesn't know, he says frankly that he doesn't know.

"Finally, he is an altruistic man; a self-sacrificing man. Service is his meat and drink; his joy and delight. Idleness and Dr. Webster were never even acquainted. Industry and Dr. Webster were ever close friends. Activity, not passivity, has been the law of his life. He has never spared himself. He has ever been grandly unconscious of himself. Much of the good he has accomplished in other people has been coined out of his vitality. He has gone about doing good. He has always willingly paid the price. There has been nobody he has thought about so little as himself. Virtue has gone out of him. He has served his generation according to the law of God. And so we delight to honor him tonight.

WEBSTER, THE DOCTOR.

(BY FRANK BILLINGS, M. D.)

Webster, the doctor, inherited Evanston from Dr. John Evans! Evanston is Webster; Webster is Evanston! Webster made Evanston; Evanston made Webster! Evanston is the synonym of culture; culture is a synonym of Webster! Town and man are one. They have lived together for thirty-five years. During that time Webster has passed upon the physical and mental status of Evanston. By example, service and physic he has developed a people almost as good as himself. He is owner of Evanston, not by "bossism," but by parental right. Evanston owes Webster everything; she knows it and loves him accordingly. Webster secured the degree of Doctor of Medicine from Northwestern University Medical School (Chicago

Medical College) in 1877. Thirty-five years ago Tyndall and Beale and Pasteur had just discovered the first family of microbes. On this side of the Atlantic ocean germs were unknown and so Webster started in practice with a knowledge embraced in expressions of "miasms," "temperaments," "sewer gas," "laudable pus" and the like. He "made good," too, and was successful in combatting these destroyers of health. He set broken bones, healed broken hearts, assisted at the birth of all the children born in Evanston in those days, attended patients in epidemics of all sorts of fevers and inflammations, was the surgeon of the railroad, attended to diseases of the eye, ear, throat and skin, and in short was a doctor worth while. Twenty-four years ago he invited the writer to see an Evanstonian with him. In that day the trains to and from Chicago were not frequent. A half day was occupied in the trip. The doctor met me at the station and we drove in a one-horse buggy to the home of the patient. He procured from his pocket a handful of keys, selected one and unlocked the door. Without meeting any member of the family he led the way upstairs to the bed-chamber where the patient, a man, lay in bed attended by the wife as nurse. The introduction was as follows: 'John, I don't know what is the matter with you, and I've brought this young fellow in to see if he knows as much or more than I do. Mary, this is Dr. Billings.' After the examination, the opinion as to the nature of the disease and treatment was discussed. Then Webster drove me about for an hour until train time as he made calls upon an obstetrical case, a broken leg, a case of scarlet fever, a scalp wound, a nervous patient, etc. In each instance he entered the house with a pass key. In answer to my question he said: "I haven't time to wait for doors to be opened; with the keys I can save time and go in quickly night and day." In the years which followed, I found that he did go in night and day, for on many occasions he was so busy that his household would not see him for twenty-four hours. His patient became his friend at once—and George, Helen, Kate and Henry from him, and Ed. or Dr. Ed., from them, made common salutations.

Few doctors have done so much for their patients. Webster worked night and day for them; rejoiced with them in recovery and grieved with them in adversity. He developed a broad view, a deep capacity for sympathy for suffering and poverty and an experience and insight into disease and the methods of relief possessed by few physicians. He was obliged to study to keep pace with the wonderful development of medicine of the past three decades. He

sought council when he felt the patient's welfare required it, without fear of his own professional standing. If he could not give the service which modern knowledge afforded, he commanded it for his patient through someone else. But Webster is versatile and has kept pace with the use of modern instruments of precision in diagnosis and treatment.

Like all good doctors, Webster has been a poor financier. He has had practice enough to have become a millionaire. Well, if he is he conceals all evidence of it. It is said of him that a minister, whom he long had attended repeatedly asked the doctor to send him a bill. Finally, Webster replied: "Look here! Never mind a bill. I'll agree to keep you out of heaven if you keep me out of the other place."

It is a mistake to think that Webster has done so well solely through his own efforts. His good sense led him to seek a helpmate very early in his medical career and it is to this better half that Webster owes much of his success. When at his busiest, running around night and day with latch keys of other people in his pocket, Mrs. Webster was kept busy answering the phone and trying to satisfy the many who desired the services of the doctor—that she would find him and that the sick one could expect a call very soon. On several occasions, when Webster had asked me to come to Evanston and I would call his house to notify him of the time of the train upon which I would go, Mrs. Webster would respond and say that she did not know where the doctor was for she had not seen him for twenty-four or thirty-six hours, as the case might be, but that she would try to find him and let him know I was on the way. No one but a tactful, helpful woman, could have kept people satisfied with Webster and his way of making visits and keeping appointments. She should have the better half of the credit which we accord to him.

For a good many years Webster sacrificed himself to his patients. It was not until he became ill with typhoid fever himself and got near enough to the other side to look over, that he really stopped to think and to wonder if it were not better to do less and remain longer here.

He has done better, not always in a perfectly rational method as to the amount of work done, but still better, and then there has come into his life new elements—another generation of Webster blood presented to him and his wife by the daughter, and these little ones have altogether changed Webster. He still is a doctor, still

is sympathetic, kind and considerate, but he no longer stays away from home for twenty-four hours or even for six if it is possible to avoid it, for these little ones are now the bosses. They have made Webster younger than he was and to all of us, who know him so well, it seems that they have made him heartier than he has been for a good many years.

This paper cannot be too long to enumerate the virtues of Dr. Webster, but I have been told by the committee that I must not take more than ten minutes of your time. Consequently, I cannot attempt to characterize him as a doctor—a doctor of the old school in every way that can show that he is sympathetic, kind, considerate and yet firm and determined that his management shall be carried out and disregarding of the financial side of medical practice; that he is a modern doctor in the sense of keeping abreast with the development of medicine, alert in the use of all measures which are helpful in diagnosis and in treatment of patients; a doctor with common sense and a broad view of life; a tactful doctor who could manage his patients and manage other doctors whom he thought necessary to help him in the care of patients; an optimistic doctor who is cheerful and hopeful and carried his patient through to the end, glad that Webster is at the helm; a doctor who rejoiced as a friend with the patients, and his friends, at the recovery, and who grieved with the mourners when a patient passed to the great beyond.

This medical library is a proper testimonial to Webster. It will remind the members of the medical profession of the character of the man who is a physician of the highest type with unostentatious ways and who has fulfilled most successfully the functions of a doctor in the relief of suffering and the prolongation of life.

A PETITION TO THE MEMBERS OF THE U. S. SENATE AND HOUSE OF REPRESENTATIVES.*

The undersigned, all medical men from many different parts of the United States beg leave respectfully, but urgently, to petition your honorable bodies to pass the Bill (H. R. 30) introduced in the 62nd Congress by Mr. Bartholdt and thus to re-establish the so-called "canteen" in the United States Army.

Many well informed persons think the canteen was like a hotel "Bar," where all sorts of liquors could be had at all times no matter whether the soldier was drunk or sober.

Let us see then what the canteen really was.

It was regulated by general orders No. 10 of General Schofield, dated February 1, 1889, and No. 51, dated May 13, 1890. Rooms were set apart for recreation such as "gymnastic exercises, billiards and other proper games." A piano was often obtained. "The sale or use of ardent spirits or wines in canteens is strictly prohibited; but the commanding officer is authorized to permit light beer to be sold therein by the drink, on week-days, and in a room used for no other purpose, and, when practicable, in a building apart from that in which the canteen is located, whenever he is satisfied that the giving to the men the opportunity of obtaining such beverage within the post limits has the effect of preventing them from resorting for strong intoxicants to places without such limits, and tends to promote temperance and discipline among them. The practice of what is known as 'treating' must not be permitted." "Gambling or playing any game for money or other things of value is forbidden."

Credit not beyond one-fifth of their monthly pay might be allowed, but only "to soldiers in good standing."

All profits were divided among the "company funds" to give extra comforts and little luxuries not otherwise obtainable.

It will be observed particularly that the very object aimed at in thus establishing the canteen was to provide a pleasant club for the soldiers and especially to give the men "the opportunity of obtaining such beverages within the post limits," that is to say "at home," and to "prevent them from resorting for strong intoxicants to places without such limits."

Since the Abolition of the Canteen in 1901, the practically unanimous testimony of general officers and Post Commanders from General

*This petition, dated December 4, 1911, is signed by 275 prominent medical men, representing all sections of the United States.

Leonard Wood (formerly an Army Surgeon) and General Fred. D. Grant (a total abstainer) down, is that intemperance has been increased with a corresponding increase in infractions of discipline and in desertions. (1)

But we wish to urge the re-establishment of the Canteen chiefly for medical reasons, as to which we may claim to have expert knowledge.

The intimate connection between the use of strong alcoholic stimulants and the contraction of venereal diseases is well known to us in civil life and holds good equally in military life. A small minority of young men no doubt deliberately incur the danger, but the large majority first lose their self control and have their passions inflamed by alcohol and then if in the Army resort to what the Surgeon General in 1889 well called "the dens of dissipation and disease just beyond the jurisdiction of the commanding officer" where they are further supplied with impure and often drugged whisky, robbed of their hard earned pay and often, if not indeed generally, contract disease. It is by reason of this latter phase of the matter that we especially urge the re-establishment of the canteen.

Few non-medical men realize the frequency and the disastrous consequences of venereal diseases, whether in civil life or in the Army.

"The statistics collected in 1908 by the President's Homes Commission, show that out of 274,611 patients treated in the city hospitals of Washington there were 27,947 cases of venereal disease." (2)

"In 1901, a Committee of Seven, under the auspices of the Medical Society of the County of New York, made an investigation into the prevalence of venereal diseases, and concluded that there were not less than 243,000 cases of venereal diseases treated in one year in that city. During the same year there were only 41,585 other cases of infectious or communicable diseases reported to the Health Department, viz: Measles, 12,570; diphtheria, 11,001; tuberculosis, 8,877; scarlet fever, 7,787; chickenpox, 99. In other words, the venereal diseases was nearly six times greater than that from all the above named infectious diseases combined." (3)

According to Dr. Prince A. Morrow, who has studied and written

(1) North American Review, March, 1911, pages 421, and 410 and 411.

(2) Journal of the American Public Health Association, March, 1911, page 166.

(3) Journal of the American Public Health Association, March, 1911, page 166.

much on the subject, ten per cent of the men who marry infect their wives. The report of the New York Committee "would indicate that nearly 30 per cent of all venereal infections occurring in women in private practice in the city are communicated by their husbands"; and from his personal observations at the New York hospitals over a period of several years, Dr. Morrow concludes that "fully 70 per cent of all women who come therein for treatment were respectable married women who had been infected by their husbands." (4)

"The Tragedy of the Marriage Altar" (5) is no myth, but a dreadful, sorrowful fact.

One form of the disease (gonorrhoea) is responsible for a very large number of sterile marriages. To it are due, as estimated by various authors, from 20 per cent to 40 per cent (and some writers give even much higher percentages) of the cases of pelvic disease in women, many, if not most, of which require abdominal operations.

Dr. Swan M. Burnett, professor of ophthalmology in Georgetown University, believes that at least 15,000 of the 50,000 blind in the United States have lost their sight because their eyes became infected at birth from their infected, though often innocent, mothers.

Another form (syphilis) is often communicated by husbands to their innocent wives. A woman so infected suffers abortion after abortion and if living children are born three out of four (happily for themselves) die very early or if they survive they carry the (most often) paternal curse with them through life. Many a wet nurse has been infected by such a syphilitic infant. Public drinking cups, the tubes used in glass blowing, and occasionally kissing have propagated the disease. Nearly every one of us knows medical friends who have been infected by making professional examinations while suffering from unobserved hang-nails or abrasions, and have suffered untold misery for years or for life.

Turning from civil life to the Army what are the facts there?

"The venereal peril," says Surgeon General Torney in his last Report, July 1, 1910, p. 59, "has come to outweigh in importance any other sanitary question which now confronts the army and neither our national optimism nor the Anglo-Saxon disposition to ignore a subject which is offensive to public prudery can longer excuse a frank and honest confrontation of the problem." Are these strong words justified? Let us see.

(4) Journal of the American Public Health Association, March, 1911, page 167.

(5) Ladies Home Journal, October, 1908.

"Reports since the Spanish American War show a steady and progressive increase in this class of diseases, so that the admission rate, which was 8.46 per cent in 1897, has now reached the enormous figure of 19.7 per cent." (Surgeon General's Report, July 1, 1910, p. 60.)

In other words, for the last six years very nearly one-fifth of the entire army has suffered from venereal diseases every year and to that extent, while ill, have diminished its effective force. "These figures," again says the Surgeon General, "are out of all proportion to those which obtain in the European armies, the rates for the latter being according to the latest obtainable information:

British (at home 6.8 per cent)	7.6 per cent.
Austro-Hungarian	5.4 per cent.
French (at home 2.8 per cent)	3.5 per cent.
Prussian	1.9 per cent.
Bavarian	1.5 per cent."

(We have taken the liberty of changing the proportion from 1000 to per cent.)

Were this all it would be bad enough. But as we have already shown the soldier himself is not the only one to bear the penalty. Our army is very largely composed of young unmarried men. When they marry they should become fathers of healthy children, and so add to our population, vitality and success as a nation. But the fact is that among those who have contracted venereal diseases in the army a considerable proportion of their marriages will be sterile, others will be characterized by many abortions, and their living children will be defective, blind and diseased. What the sorrows of their infected wives may be we know in part, the rest can only be surmised.

What now are the remedies proposed by the Surgeon General himself? In his Report of July 1, 1910, he urges proper surgical treatment, but especially prevention and education:

"The organization of soldiers' clubs, canteens, etc., where enlisted men can find amusement and recreation sufficiently attractive to keep them at home and away from vile resorts."

"The formation of temperance associations among the enlisted men, the association of intemperance and venereal indulgence being well understood."

"Instruction of the men by lectures and by informal advice whenever the opportunity offers as to the nature of venereal diseases, the extent of their prevalence among prostitutes, and the grave peril

not only to those who contract them, but to their families and posterity. They should also be taught that sexual intercourse is not necessary to good health and the highest degree of mental and physical vigor."

These are in line with the proposals of Lord Roberts for the British Army in India. ("Forty-one Years in India," ii, 418-421.) He did not abolish the Liquor Bar in the canteen, but restricted its size and its sales chiefly to beer and encouraged the furnishing of recreation rooms, the promotion of temperance societies, etc., "an arrangement," he says, "which has been followed by the happiest results." Exactly the same condition existed in our former army canteen, and we believe would prevail again.

The demands of military discipline require the soldier to surrender, for the good of the State, much of his individual liberty and many of the privileges enjoyed by other citizens. Is it wise further to restrict these by legislation in a way which not only does not contribute to military discipline, but as we learn from the almost unanimous testimony of army officers impairs it?

Soldiers are required by the special conditions of military life to give up their home life, and the moral protection of marriage, and to live a life of enforced celibacy. Is it wise to diminish the attractions of their club, and to increase the moral and physical risks of their environment by Act of Congress?

In view of what we have set forth above, we respectfully pray your honorable bodies in the interest of temperance; of military order and efficiency; and of the health and happiness of our soldiers and of their future wives and children to re-establish the canteen in the United States Army by passing the Bartholdt Bill (H. R. No. 30).

THE CHICAGO MEDICAL RECORDER

AND
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DR. EDWARD H. WEBSTER.

On January 3, 1912, there was held an interesting meeting in the Public Library of the city of Evanston, Illinois. The occasion was the formal opening of the Webster Medical Science room that had been dedicated in honor of Dr. E. H. Webster, of Evanston, by resolution of the Public Library Board three years ago.

Dr. Will Walter made the address for the trustees of the fund that is being raised to maintain the room and its medical library, and Dr. Frank Billings, of Chicago, spoke on "Webster, the Doctor." Both addresses will be found in this issue of THE MEDICAL RECORDER.

It is unusual to pay such a handsome tribute of respect to a man while living, but if any one in classic Evanston is entitled to such distinguished honor it is Dr. Edward H. Webster. The Doctor has been the leading physician in his city for thirty-five years and is affectionately known by old and young as "Ed Webster." Everybody loves Ed Webster. Strong of build, with a never failing sense of humor and good cheer, well educated in medicine, with a stout heart

to meet every emergency and with the tenderness of a woman, Dr. Webster brought to his professional career faculties unsurpassed. With this equipment he has crept into the hearts of his townsmen and there he has lingered for a generation and there he will stay to the end. Let us hope that he will still be spared in his merciful career many years in the future.

THE CANTEEN.

Dr. W. W. Keen of Philadelphia, one of the great present-day leaders of American medicine, has addressed the profession of the country and enclosed a copy of a petition signed by medical men. They are "mostly all men who are teaching in medical schools and practicing in hospitals," and the petition asks Congress to re-establish the canteen in the army. On behalf of the petitioners Dr. Keen says: "We believe that the movement is one which will greatly promote temperance and efficiency in the army, will reduce greatly the prevalence of venereal diseases and protect the health and lives of soldiers and their present or future wives and children."

The MEDICAL RECORDER is strongly in favor of temperance, as we believe all sane men are, and we are of the opinion—shared by substantially all army officers—that the abolishment of the canteen has increased intemperance and the diseases associated with drunkenness to a degree that is somewhat alarming. The efficiency of the army under these circumstances must be decreased and the health of the forces impaired. There is something in the bosom of every real man that rebels at restraint of what he shall eat or drink, and we believe that the re-establishment of the canteen in the army will relieve that rebellion and reduce the desire for drink. There is something in human nature that longs for the things unattainable or that are forbidden, and we agree with the officers of the army and the medical men who have signed the petition to Congress, that the re-establishment of the canteen will diminish the desire for drinking among the soldiers and save them from the contagion that follows a mind muddled with booze and more or less irresponsible.

ADVERTISING CHRISTIAN SCIENCE.

Senator Works of California made a speech in the Senate of the United States on July 6, 1911, in which, under the guise of opposing the Owen Bill to create a National Department of Health, he took advantage of his high position to advertise a religious cult

that makes the practice of medicine a part of its creed. The Senator in his address said in effect that he, his wife, and his son, after regular physicians had failed, had been cured by Christian Science.

This kind of talk, to begin with, is of the kind indulged in by cheap and ignorant mountebanks, that have forever hung upon the skirts of medicine and are always, without any exception, dishonest, and they are generally ignorant.

The Los Angeles County Medical Association has taken the question up with Senator Works and numerous letters have passed between them. The whole correspondence, including two letters from ex-Senator Wm. E. Chandler, of New Hampshire, to Senator Works, is published in the Bulletin of the Los Angeles Society, with other pertinent matter, with Dr. George E. Kress as editor. The whole places the Senator and even the dignified Senate of the United States in a ridiculous light. Senator Works, while boosting the cause of Christian Science, took occasion to traduce the reputations of physicians in Los Angeles, but whose names the Senator withheld.

The Society asked the Senator to give the names of the physicians who had failed so ignominiously but the Senator so far has failed to give the names, and is evidently afraid of reprisals for his rash statements in the Senate.

The letters of Senator Chandler are most able, but in a vein of humorous sarcasm. His first letter concludes as follows:

"P. S.—Is Mrs. Harriet W. Works, C. S., a recorded practitioner at Los Angeles, Cal., 520 Hillman building, your wife?"

In the second letter the question is again asked: "If a Christian Science Healer advertising in Los Angeles is your healed wife?"

Americans frequently refer to the United States Senate as the most dignified legislative body in the world but we have not noticed that it has in any way offered any rebuke to the tirade of bigotry and commercialism of which it was made the victim by Senator Works on July 6, 1911. Aside from the efforts of the Los Angeles Medical Association and the scathing letters of Mr. Chandler, no effort seems to have been made to purge the pages of the Senate record of the infamy that crept into the proceedings of July 6.

The state of California has declared for the recall of recreant public officials. How would it apply to a Senator of the United States?

In the name of medicine, we call upon medical men everywhere,

to take steps openly to rebuke this impudent man. We call upon a free church, a free religion of whatever caste or creed to rise up in protest against this attempt to enthrone religious creed in a free government.

The Los Angeles Medical Association has done the country a distinct service by making public the correspondence and other relative facts.

EUGENICS.

Dr. Abraham Jacobi of New York, president-elect of the American Medical Association, venerable in years and wise with the cumulative information that his discerning mind has shrewdly culled from the years as they have passed in procession before him, has stated in a recent address that "there ought not to be so many babies." Dr. Jacobi also says that "only about half as many infants die nowadays out of every hundred as died fifty years ago." We may infer from this that a lower birth rate does not mean a reduced population, for sanitary science is saving fifty per cent more of the babies that are born now when compared with the record of half a century ago.

Dr. Wm. T. Belfield of Chicago, in an address to the National Council of Women, advocated the enactment of a state law limiting the number of children as well as wives, and adds: "The state says that a man may have only one wife and I see no reason why the state should not have the right and the power to say that he shall have only a certain number of children." Dr. Belfield further argues that for a man with a limited earning capacity of \$3.00 a day to have more than three children is a crime against society.

Dr. G. Frank Lydston, in an address before the Chicago Medical Society, advocated the establishment of a "thoroughly competent marriage board to pass on all applicants for marriage licenses."

Dr. Harold N. Moyer, in discussing the address of Dr. Lydston, said that the state of New Jersey had made a census of the descendants of a feeble-minded man born in New Jersey in 1770. Of the 400 descendants of this man 165 were found to be idiots.

These men are cited because they are scientific men and responsible to their profession and to the community in which they live for their statements. Their statements are concise and there is no mistaking their meaning. Their position is the position of common sense added to experience and scientific responsibility. They

are right, and Colonel Roosevelt is wrong in advocating large families unconditionally. Little attention would have been given to the Colonel and his catchy phrase "race suicide" if it had not been uttered while he occupied the exalted position of President of the United States.

The science of eugenics dictates that care should be exercised in the quality and the stamina of children to be born rather than in the numerical output. It is plain that syphilitics should not procreate. It is equally plain that consumptives should exercise the utmost care in mating or they should not procreate. The same is true of the feeble-minded, the insane, the criminal, the harlot, and all others who are born with or who have acquired physical or mental defects. None of them should procreate their inferior kind.

Beasts are bred for bulk, for speed, for color or for form. We recognize it may be a different thing to breed men for temperament, for spirituality, for wisdom, for soul and all the qualities that raise man above the animals and fashion him after the divine, but we can and we should do as much for the breeding of men as we do for the beasts of the field. We should cut out the misfits; all those who are liable to be a burden. After that is accomplished it will be time enough to dispute as to the possibility of breeding for intellectuality.

HOME FOR OLD MEN.

Through the beneficence of the late James C. King, the new Home for Old Men, founded and endowed by him and bearing his name, is now open. The home is located on a block of ground at South Park avenue and Garfield boulevard, and overlooks South Park on the east.

As an institution for the purpose it is admirably located; well built; well arranged, equipped and managed. Mr. William C. Graves, the superintendent, is specially qualified for his duties and the home will be a boon to those who find shelter within its walls.

Book Reviews.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles. By Leading Members of the Medical Profession Throughout the World. Edited by Henry W. Cattell, A. M., M. D., Philadelphia. With the Collaboration of Doctors Wm. Osler, John H. Musser, A. McPhedran, Frank Billings, Chas. H. Mayo, Thos. H. Rotch, John G. Clark, James J. Walsh, J. W. Ballantyne, John Harold and Richard Kretz. With Regular Correspondents in Montreal, London, Paris, Berlin, Vienna, Leipsig, Brussels, and Carlsbad. Volume IV. Twenty-first Series, 1911. Philadelphia: J. B. Lippincott Co. Price, \$2.00.

This splendid series of clinics is steadily improving in value, as would naturally be expected from the able editor and his collaborators. Among the many valuable articles we may mention Enuresis by Burnet; The Modern Treatment of Syphilis by Trimble; Modern Instruments in Cardiovascular Disease by Norris; Rat-Bite Disease by Proescher; Sensitization and Its Relation to Practical Medicine by Vaughan, Jr.; Local Anesthesia in Inguinal Herniotomy by Macmillan; Intestinal Surgery by Vance; Catarrhal Deafness by Hays; Legal Facts in Surgical Cases by Frink; The Successful Practice of Medicine by Reilly. In truth it is a most readable book and in justice we should mention every article it contains. Every physician should be a subscriber to these invaluable series.

FURTHER RESEARCHES INTO INDUCED CELL-REPRODUCTION AND CANCER. Consisting of Papers by H. C. Ross, M. R. C. S. England, L. R. C. P. London; J. W. Cropper, M. B., M. Sc. Liverpool; and E. H. Ross, M. R. C. S. England, L. R. C. P. London. With Illustrations. The McFadden Researches. Philadelphia: P. Blakiston's Son and Co. Price, \$1.00 net.

This is a valuable contribution to the cancer problem. Although the validity of the author's researches has been vigorously attacked, it is not more than fair that he should be given a hearing and we commend the book to an impartial investigator.

CASE HISTORIES IN MEDICINE. Illustrating the Diagnosis, Prognosis and Treatment of Disease. By Richard C. Cabot, M. D., Assistant Professor of Clinical Medicine, Harvard Medical School.

Second Edition; revised and enlarged. Boston: W. M. Leonard, publisher, 1911. Price, \$3.00.

We are glad to see a second edition of Cabot's instructive book. This edition is intended more for practitioners and we think one hour, or even more, spent each day in considering and studying these cases will be time well spent, and prove to be of greatest value to the physician desirous of becoming more proficient in the diagnosis of disease. In this edition the author has changed the arrangement of cases, classifying them under the various headings of infectious diseases, diseases of gastro-intestinal tract, etc. The cases have been increased to one hundred. We most cordially commend this book.

SCIENTIFIC FEATURES OF MODERN MEDICINE. By Frederic S. Lee, Ph. D., Dalton Professor of Physiology, Columbia University. New York: The Columbia University Press, 1911.

This is a splendid book which we trust will have a most extensive circulation among intelligent laymen. It demonstrates the true scientific character of modern medicine, the marvellous progress of scientific surgery, and demonstrates the utter fallacy of cults and healing sects. The book treats of the nature and methods of treating disease; bacteria and protozoa and their relation to disease; the problem of cancer; the role of experiment in medicine, etc. These lectures were delivered at the American Museum of Natural History in New York and deserve the most unqualified endorsement of the profession. The book is interesting throughout and written so clearly that any intelligent person should understand and profit by it.

HOW TO LIVE ON TWENTY-FOUR HOURS A DAY. By Arnold Bennett, Author of "The Old Wives Tale," etc., etc. George H. Doran Company, publishers, New York City. Price, 50 cents net.

One hears so much about the strenuous life of today that it is a little surprising to be seriously taken to task by Mr. Arnold Bennett for not getting out of life quite as much as we should. He believes that most of us must confess to a general dissatisfaction with the arrangement of our daily lives and to a feeling every day that something has been left undone.

In this delightfully written essay he suggests ways of getting the full value out of twenty-four hours a day, and in a spirit of pleasant humor really conveys many novel ideas about utilizing

time. One can read the whole book in an hour or so, but it will prove thought-provoking and bracing in the extreme.

MENTAL EFFICIENCY, And Other Hints to Men and Women. By Arnold Bennet, Author of "The Old Wives Tale," "How to Live on Twenty-Four Hours a Day," etc. Price, 75 cents net.

In this series of genial essays Arnold Bennett tells in a personal sort of way what have proved for him the most helpful views of life. Anything is of importance that helps one to settle for himself the old questions concerning the intrinsic values of life, and perhaps one may find points of interest even in a semi-satiric little volume like this. There are chapters on Mental Efficiency, Expressing One's Individuality, Breaking With the Past, Settling Down in Life, Marriage, Books, Success, The Petty Artificialities, and The Secret of Content.

A HISTORY OF NURSING. The Evolution of Nursing Systems from the Earliest Times to the Foundation of the First English and American Training Schools for Nurses. By M. Adelaide Nutting, R. N., Superintendent of Nurses, The Johns Hopkins Hospital; President of the American Federation of Nurses, etc., and Lavinia L. Dock, R. N., Member of the Nurses' Settlement, New York; Secretary of the American Federation of Nurses, etc. In Two Volumes, Illustrated. New York: G. P. Putnam's Sons. Price, \$5.00.

These volumes, dedicated "to all members of the nursing profession," have been written by two of the most distinguished members of that profession. Their book is unique, and the research work involved must have been enormous. The facts they sought were scattered through the libraries, public and private, of the world, and it must have been a task of no mean moment to sift and corroborate this information before compiling and welding it together into an authoritative whole. These facts they have presented in a deeply interesting way and in a most lucid and charming style. These volumes constitute a complete history of nursing from its earliest legendary beginning in prehistoric eras down to the time we now recognize as the period of the modern trained nurse. Perhaps the most interesting, as it must have been the most difficult part of the task, is the tracing back and getting into a connected whole the history of nursing and hospital building in the Europe of the Middle Ages—associated as it was so closely with the religious life of that period.

The nursing profession is certainly deeply indebted to the authors for having provided what must remain for many years the standard history of this subject.

RETINOSCOPY. (Or Shadow Test) In the Determination of Refraction at One Meter Distance, With the Plane Mirror. By James Thorington, A. M., M. D., Author of "Refraction and How to Refract," "The Ophthalmoscope and How to Use It." Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine; Ophthalmic Surgeon to the Presbyterian Hospital, etc. Sixth Edition, Revised and Enlarged. Sixty-One Illustrations. Philadelphia: P. Blakiston's Son & Co., 1911. Price, \$1.00 net.

This little book is admirable, showing the value of the shadow test in estimating the refraction of the eyes. It has been carefully revised, and will easily maintain its popularity. It is practical throughout, clear and concise, and we predict further editions will be called for.

TEXT-BOOK OF MEDICAL JURISPRUDENCE AND TOXICOLOGY. By John J. Reese, M. D. Late Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania; Late President of the Medical Jurisprudence Society of Philadelphia. Eighth Edition. Revised by D. J. McCarthy, A. B., M. D. Professor of Medical Jurisprudence (Geo. B. Wood Foundation) in the University of Pennsylvania; Neurologist to the Philadelphia General and St. Agnes Hospitals, etc., etc., Philadelphia: P. Blakiston's Son & Co. 1911. Price \$3 net.

The well-deserved popularity of Reese's Jurisprudence is likely to continue under the careful revision and supervision by Prof. McCarthy, the successor of Reese in the University of Pennsylvania. Much new matter has of course been added, particularly on the subject of insanity, to bring it up to date. Many other changes will be noted, and we can cordially recommend this book to the medical student, the lawyer and the practising physician.

CONTRIBUTIONS TO MEDICAL SCIENCE BY HOWARD TAYLOR RICKETTS, 1870-1910. Published as a Tribute to His Memory by His Colleagues, Under the Auspices of the Chicago Pathological Society. The University of Chicago Press. Chicago, Ill. Price \$5.00 net, \$5.33 postpaid.

These valuable contributions to scientific literature remind one only too forcibly of the great loss sustained by the medical profession

in the untimely death of this wonderfully talented man. The Chicago Pathological Society deserves the greatest possible credit in publishing these contributions in one volume as a tribute to the memory of Howard Taylor Ricketts. The cost of the publication is borne by members of this Society and other friends and admirers in the various laboratories of this country.

In addition to the republished articles by Ricketts, some others have been included written by his pupils, which were inspired by Ricketts and in preparation before his death. His greatest contributions to scientific literature consisted in his work in blastomycosis, Rocky Mountain spotted fever, and his last work and investigation in typhus fever in Mexico City whereby he contracted the fatal disease which terminated his brilliant career. In addition to articles on these subjects there are many other contributions, among which we may mention: Lymphatotoxic serum, neurotic serum, concerning the possibility of an antibody for the tetanophile receptor of erythrocytes, etc. All these articles are of the very highest order and give one an idea of how much more invaluable work this gifted man would have accomplished. His name will always be revered by his colleagues and associates.

FOURTH REPORT OF THE WELLCOME TROPICAL RESEARCH LABORATORIES. At the Gordon Memorial College, Khartoum. Volume A—Medical. Andrew Balfour, M. D., B. Sc., F. R. C. P. Edin., D. P. H. Camb, Director. Published for Department of Education, Sudan Government, Khartoum, by Balliere, Tindall & Co., London. Depot for the United States: Toga Publishing Co., 35 West Thirty-third Street, New York City. Price, \$5.00 net.

To thoroughly understand this splendid contribution to tropical medicine of the Sudan, we quote the following functions of the Wellcome research laboratories at Khartoum, viz.:

- (a) To promote technical education.
- (b) To promote the study, bacteriologically and physiologically, of tropical disorders, especially the infective diseases of both man and beast peculiar to the Sudan, and to render assistance to the officers of health, and to the clinics of the civil and military hospitals.
- (c) To aid experimental investigations in poisoning cases by the detection and experimental determination of toxic agents, particularly the obscure potent substances employed by the natives.
- (d) To carry out such chemical and bacteriological tests in

connection with water, food stuffs, and health and sanitary matters as may be found desirable.

(e) To promote the study of disorders and pests which attack food and textile producing and other economic plant life in the Sudan.

(f) To undertake the testing and assaying of agricultural, mineral and other substances of practical interest in the industrial development of the Sudan.

When it is further considered that most able scientific workers are in charge of this research work, under the leadership of the distinguished Dr. Andrew Balfour, it is easily understood what a mine of information is contained in the report before us. Space forbids to give more than a summary of contents, viz.:

The Future of Scientific Work in the Sudan—Sleeping Sickness in the Anglo-Egyptian Sudan—Investigation of Natural Conditions in the Bahr-El-Ghazal—Animal Trypanosomes—Trypanosoma brucei—Human Spirochætosis—The Spirochæte of Egyptian Relapsing Fever—Spirochætosis of Sudanese Fowls—Method of Obtaining Blood Aseptically for the Culture of Hæmatozoa in the Tropics—Fallacies and Puzzles of Blood Examination—Kala-azar in the Kassala and Blue Nile Districts and Eastern Sudan—General and Pathological Reports of the Kala-azar Commission—The Alkalinity of the Blood Serum in Kala-azar—Herpetomonas lygœi—Descriptions of Cases of Kala-azar, Non-Ulcerating Sore, "Oriental Sore," Parasitic Granuloma, Veldt Sore, Ulcus tropicum, Leucoderma—Fever in the Sudan—Pyrexia—Diphtheria in the Tropics—Some Aspects of Tropical Sanitation—Sanitary Notes—The Watersupply of Towns in the Tropics—Lactose-fermenting bacilli in Surface Water, etc.—Filtering Properties of the Zeer—Human Botryomycosis—Veterinary Notes—Miscellaneous Notes on Hæmatozoa, Howell-Horrocks Bodies in the Human Blood, Mycetoma, Leprosy, Dysentery, Peculiar Bodies in the Intestinal Lymphoid Follicles of an Egyptian—Routine Work—Index.

It is splendidly illustrated with 14 colored plates, 44 reproductions in black and white drawings, 104 reproductions of photographs, with maps, plans, etc. This report reflects great credit on the able workers who have produced it and we earnestly recommend it to the attention of the medical profession in the United States.

News Items

To Let.—Peoples Gas Building, No. 1433. Hours 1 to 3 and 3 to 6, front and rear rooms; also smaller single room, hours 3 to 6.

For Rent.—Lease can now be made for occupancy May 1st of space in physicians' office in Venetian building. Large, well furnished consultation room. Inquire 705 Venetian building.

Nurses' Pensions.—A short time ago we called attention to the need of establishing a pension fund for incapacitated nurses. It is gratifying to note the action taken by the Mount Sinai Hospital in regard to this situation. The superintendent of that hospital announces that subscriptions have been received which complete a pension fund of \$60,000 for the relief of nurses who after graduation from the training school of the hospital have supported themselves at least in part by nursing for a period of twenty years. The fund is to be administered by a committee of the Mount Sinai Alumnae Association. In exceptional circumstances, relief may be given to nurses who become incapacitated before the expiration of twenty years of active work.

Charles Dickens and Women.—The recent sudden death in New York of Mr. Henry Snowden Ward, the distinguished secretary of the Dickens Fellowship in England, is as sincerely deplored in America as in the land of his birth. His delightful lectures on Dickens and Shakespeare have been popular literary features of this season; and one of his latest acts was the preparation of an illuminating article for Lippincott's Magazine on "Charles Dickens and Women," which will be published in February when the Dickens centenary is due.

Comparative Loss of Life by War and Epidemic in 1911.—The total loss of life by wars during 1911 in actual battle amounts to 72,000 in round numbers, as compared with 13,000 in 1910, 68,000 in 1909, and 22,000 in 1908. In making this enumeration no account is taken of the large number who must have perished in massacres which have frequently characterized both the pending wars in China and Tripoli, but of which no estimate has been made. The losses as reported are as follows: China, 41,878; Tripoli, 13,309; Mexico, 7,624; Arabia, 2,790; Morocco, 1,913; Persia, 1,800; Central Africa, 1,249; Paraguay, 300; Haiti, 71; Honduras, 55; Portugal, 44; Spain, 41; Formosa, 30; Philippines, 62; Ecuador, 11.

Cholera and plague, the principal epidemics of the year, combined with famine, have made sad havoc. Cholera has swept away about 34,000, mostly in Italy and Russia, and the plague about 720,000 in China and India. In round numbers, 754,000 persons have perished, as compared with 150,000 in 1910, 5,000 in 1909, and 50,000 in 1908. In addition to this loss of life by pestilence, 1,100,000 perished by famine in China, besides a large number in the Russian provinces.

Public Health Service.—The following extract from the report of the Secretary of the Treasury MacVeagh to Congress at the opening of the

present session calls attention to the good work that is being done by this important branch of Federal service:

"While the Public Health Service has been doing remarkably important, efficient and enlightened work, its development and expansion have been, of late, more or less restrained because attention has been called from the service itself to an effort to erect a health department with a new member of the Cabinet at its head. I think the time has come when we should sufficiently concentrate attention upon the public health work already in hand to develop it to the utmost. I expressed similar views in my report of last year; and I then called attention to the fact that the movement for a department of health would not be affected, either favorably or unfavorably, by the performance of this plain and simple duty of doing our utmost, under the present organization, to accent the great opportunities lying before this important federal service.

The unexpected death of Surgeon General Wyman brings this service into special notice; and no better recognition to this man, who did so much to build the service up and who was so eager to carry it forward, could be made, than to promote and expand its usefulness. And when the new surgeon general, who must soon be appointed, shall enter upon his duties, I shall have the honor to make, with his approval, some recommendations for the advancement of this important governmental work."

Ninth International Red Cross Conference.—The American Red Cross desires again to invite attention to the exhibition in connection with the Ninth International Red Cross Conference, which will be held in Washington, D. C., from May 7 to 17, 1912.

The exhibition will be divided into two sections, which will be styled Marie Feodorovna and General. The former is a prize competition, with prizes aggregating 18,000 rubles, or approximately \$9,000, divided into nine prizes, one of 6,000 rubles, approximately \$3,000; two of 3,000 rubles each and six of 1,000 rubles each.

The subjects of this competition are as follows:

1. A scheme for the removal of wounded from the battlefield with the minimum number of stretcher bearers.
2. Portable (surgeons') washstands, for use in the field.
3. The best method of packing dressings for use at first aid and dressing stations.
4. Wheeled stretchers.
5. Transport of stretchers on mule back.
6. Easily folding portable stretchers.
7. Transport of the wounded between warships and hospital ships, and the coast.
8. The best method of heating railway cars by a system independent of steam from the locomotive.
9. The best model of portable Roentgen apparatus, permitting utilization of X-rays on the battlefield and at first aid stations.

The maximum prize will be awarded to the best exhibit, irrespective of the subject, and so on.

GRAND INDEX

THE CHICAGO MEDICAL RECORDER

FEBRUARY, 1912.

Original Articles.

"THE CHILD THAT IS TO BE."

BY CHARLES B. REED, M. D., CHICAGO.

It would seem to be unnecessary in this day of advancement to expend energy in combating the theory of prenatal influences. However, in a recent number of the Ladies' Home Journal an article appeared under the above title which demands a reply.

It is not on account of the opinions presented, for these have been refuted many times, nor is it with the hope that the writer, Sarah Curtis Mott, will be enlightened thereby, but solely because the great circulation of the Journal has been utilized to scatter far and wide a set of impressions, claims and vitiated anachronisms which will do much injury among our people.

Without knowing anything of the education or training which enables Mrs. (?) Mott to pose as an authority in these matters, it is easy to infer from her paper that she is either preparing a brief or is innocently unaware of scientific discoveries in the subject she discusses. The statements she makes constitute a collection of falsities inherited from the superstition and ignorance of the past and continued only by the prejudice and credulity of the present.

Even if the opinions were as true as they are false, their publication to all classes of people is calculated to produce exactly the condition which the writer professes a desire to avert. They put upon the expectant mother the entire burden and responsibility for the mental and physical future of her babe, a burden which was never

intended by Nature—a burden which would grow heavier and more unbearable in exact proportion to the growth of intelligence and conscience in the mother.

The writer is doubtless sincere and probably animated by what she regards as lofty motives, but so, too, we must believe was the man who inspired the "Children's Crusade" and wrecked the lives of innocent thousands. Consider for a moment the advice that a woman should do no hard work during gestation—excluding even her housework. Suppose this advice is accepted as valid by anxious mothers who are compelled by economic reasons to violate it as their ancestors have done with impunity since history began. If the mother is conscientious her constant dread of injuring her child will, if the theory be true, bring about such a condition, and if it be not true, she has experienced months of unnecessary misery.

Suppose, on the contrary, it is economically possible to follow the suggestions offered. The woman develops at once into a self-centered sybarite and according to the theorist her child is formed on similar lines of easy indolence and self indulgence; or, having more time to dwell on the discomforts of her obnoxious fate, she forms her child into a discontented, selfish, saturnine egotist.

Fortunately, such power has never been delegated to man, either past or present, by the All Wise Creator.

The women of Europe and America who do hard manual labor during gestation, either in or out of doors, show no greater percentage of unfit descendants than those who are born amid the idleness and luxury of oriental seraglios. By wise provisions of Providence the offspring in all cases is held closely to type in spite of serious physical and mental variations therefrom in the parent. Every family can substantiate this position from its own experience. It is not now and never has been economically possible for any but a small minority of our women to avoid work during gestation. Nor is it desirable. A comparison between the offspring of the honest, hardworking middle class and the descendants of the idle rich is sufficiently illuminating—the more so the farther it is carried. The individual who is not occupied is a prey to unhappiness and anxiety if well, and to promulgate the theory that such a condition is ideal for the gestating woman is not only a self contradiction but it is criminal when we recall how universally necessitous is work.

Mrs. Mott admits that a woman's mentality during gestation is not normal but she does not explain why, by her theory, the birth of normal children is the rule, rather than the exception.

However, it is when Mrs. Mott comes to the question of prenatal deformities that her misinformation approaches its climax. She says it is a "demonstrated physiological fact" that there is a constant interchange of blood through the membrane surrounding the child. It is not clear from the context whether she applies these strong words to the membrane universally or only to the one spot occupied by the placenta. If we assume the latter, she has only to look more closely into any standard work on physiology to learn that even at that point there is no direct communication between the maternal and foetal fluids. They must first pass the exacting guardianship of an alert and active membrane.

It happens, therefore, that the characteristics of mind and body of the mother, and much less "those of her husband" (sic) and "his or her ancestors" (sic, sic) can by no possibility be transmitted to the child by this route, even if it were necessary. Nature has arranged the matter far more simply, and all the potentialities of the future babe, except nutrition, are settled and sealed up forever when the male and female cells unite. The function of the mammalian mother is to furnish nutriment to the growing organism, just as the hen furnishes heat for her egg. There is no nerve tissue connecting mother and babe, and hence no transmission of nervous or psychic action and thus far no scientist, unless it be Mrs. Mott, has been able to explain how mental images, impressions and freaks of imagination can be transmitted by a column of fluid through an animal membrane.

Again she states it as a "fact" that it is not only possible to mark a child in utero by various blemishes and deformities, but strange to say it is necessary to use great precaution to avoid such effects. This assertion she supports by saying that numerous cases are on record which "conclusively prove" it. Prove it to whom, may we inquire? How many women have ever taken such precautions as advised, how many have ever heard that such precautions were necessary or what specific precautions they should take? Can it be shown that the women who have taken such precautions show a smaller percentage of unfit babes than those who have paid no attention to the matter? Does the trifling percentage of the marked to healthy babes support such a position?

Women who have seen the most atrocious sights or had most vivid experiences rarely produce marked or deformed children, while many who give birth to monstrosities can trace their misfortunes to no definite disturbing influence *even after delivery*. That they occur

in certain relation to some fancy or vision is entirely a coincidence when it is not an act of the creative memory.

At the present time it is not difficult to explain on mechanical grounds nearly all of the existing foetal deformities without the aid of psychic impulses, maternal impressions or planetary influences. Similar deformities in the lower animals are equally open to scientific demonstration. This latter phase of the subject Mrs. Mott, for some esoteric reason, has failed to discuss. It would be quite edifying to hear how her theory applies when a highly imaginative and hard working sow marks *one* of her litter with two heads, or by what freak of fancy or frightful vision the placid cow marks her offspring with two tails or five legs.

As a rule, deformities and monstrosities are developed during the formative period of intra-uterine life, and as this is limited to eight weeks or less in the human family, the marking must occur in most cases before the woman is aware of her pregnancy. If it were so easy to mark a babe and to produce anatomical variations it ought not to be difficult to secure sex at will, and yet hitherto the efforts to solve this problem have not been successful. This accomplishment would confer upon vain and frivolous women the power to destroy the balances of nature in which the destinies of the human race are weighed. This may come in time but, fortunately, conception, determination of sex and the growth of the embryo are entirely uninfluenced by the human will and here, in a confidence begotten of the centuries, we may safely let them rest until science discovers the truth.

RELATION OF SUGAR TO THE PUBLIC HEALTH.*

By HENRY T. BYFORD, M. D.

As the human system requires more or less definite proportions of proteids, fats, carbo-hydrates and minerals, the value of diet depends less upon the quantity of the food in general than upon the quantity it contains of each of the four kinds of nourishment. One of them cannot displace the others to a considerable extent without becoming an unutilizable burden to the system, nor can it do so without depriving the system of something it needs.

Sugar as found in nature exists in an attenuated form, except in a few tropical fruits that are usually too perishable to be transported for general use. In order to obtain much nourishment from a fruit diet one must eat so much that the alimentary canal is swamped as it were. Thus the pickaninny gets sick over his watermelon and the white child over his basket of grapes. The sugar in vegetables is still less concentrated. What woman or child could take its daily equivalent of sugar by eating sugar beets, or by drinking the thin sap of the sugar maple, of which it takes twenty-five pounds to make one pound of sugar? I think they might take the amount the system requires but not the quantity that so many of them habitually eat. Nature prepares sugar for our needs in proper quantities and proportions. And it is to such quantities and proportions as are found in Nature that the human race has been accustomed during the long period of its development. The reason why sugar in the concentrated or artificial forms is so fattening to some persons, viz., to those who are naturally inclined to take on fat, is that by being burned up so readily it supplies the immediate need and allows the system to lay up the starchy and fatty foods, which are assimilated more slowly and more easily converted into storage fat. It is rapidly assimilated for immediate use rather than for prolonged storage.

Now what is the action of, and what becomes of this excess of highly inflammable food in the blood of those who eat more than they can utilize? How does it affect the man who grows fat on it and the man who stays lean on it; the man who thrives on it and the man who starves on it?

When sugar is taken in excess it may be oxidized in superabundance and act as a stimulant. During tests of endurance the

*Extract from paper delivered before Chicago Literary Society, Jan. 15, 1912.

athlete will often accomplish more work by making use of sugar during the test than by depending upon the ordinary diet. But if the intake is not thus utilized its combustion soon becomes imperfect and incomplete. The unutilized products irritate the nervous tissues and produce at first exhilaration, then restlessness, insomnia, neuralgia or neuritis, and contribute to the development of diabetes, gout, diseases of the liver, kidney, skin and other organs and tissues.

After the system has suffered for a longer or shorter time in one or the other of these ways the overtaxed digestive organs fail to take proper care of the saccharine and starchy elements and a residue remains in the stomach or intestines which undergoes fermentation just as syrup does in hot weather. The sugar eater then has eructations of gas, periodic intestinal indigestion with pains, or perhaps nausea or catharsis; or even inflammation of the intestinal mucous membrane, or perhaps gall stones. It might make what has been said seem a little more reasonable to relate an experience. In my earlier days of practice I was called out of bed one night to see a child in convulsions. I arrived just in time to see it die, although it had gone to bed a few hours before in apparent good health. As it expired a yellowish, sour-smelling, yeast-like froth began to pour out of its mouth in such quantities as to cover its chin and chest. The sweets which it had eaten in the afternoon had fermented and distended its stomach and literally killed the child; and then as the orifices of the stomach relaxed in death, the contents foamed out through the mouth. I already knew that sugar in the stomach could ferment like stale syrup or molasses but I had not fully realized how poisonous it could become and how quickly it could kill until I had this indisputable ocular proof.

But of course an excess of sugar does not always produce perceptible immediate effects, nor does it produce in any one person all of the symptoms and diseases I have mentioned. In young persons taking it in moderate excess, a large part of that which is not utilized is eliminated in different forms by the skin, kidneys and bowels, and the serious consequences are postponed for a number of years, or until symptoms of indigestion may make it necessary for the victim to cut out the excess before much permanent harm has been done. But when the damage is done it is irreparable and the sugar eater's furnace being almost burnt out, as it were, cannot be made new. His lost metabolism cannot be restored and he either slowly starves to death or, if he does go on under ordinary pressure, collapses when one of the vital functions gives out completely.

Now let us take a commercial view of the subject. During all the millions of years that man has been on earth he depended for sugar upon what he could find in nature in the attenuations and quantities I have already referred to. Even as late as two hundred years ago it was, in its concentrated form, a luxury and used only as a preservative of medicines and a few other articles. In the year 1700 only ten thousand pounds of sugar were manufactured in Great Britain; in 1885 over twenty million pounds. Thus in less than two hundred years, two thousand times as much was used. According to a recent government report an average of 75 pounds of sugar is consumed yearly by every person in the United States.

A few facts about the consumption of candy might serve as an illustration of the development of the sugar industry in this country. The per capita consumption of candy in the United States is approximately thirty pounds per annum; that means 2,700,000,000 pounds of sweets are sold each year in the United States. There are factories which specialize in the manufacture of marshmallows, of high-boiled candies, such as stick candies, of lozenges, of sugar-coated confections and of chocolates, and some of the factories in their specialities have outputs of 40,000 to 50,000 pounds a day. Other factories make general lines, and many of them produce as much as 100,000 pounds of candy a day. There are also thousands of smaller factories scattered throughout the United States producing from 500 to 10,000 pounds a day. (By V. L. Price, of the National Confectioners' Association, in an article on "Candy Making An Art," in the *Chicago Evening Post*, Saturday, Sept. 3, 1911.)

This development in the manufacture and consumption of sugar has taken place in about two hundred years. But this is not all, for the increase in the cultivation of fruits and vegetables during the past three hundred years, the recent development of refrigerator transportation, and the growth of the industry of preserving fruit and vegetables for winter use have contributed enormously to the consumption of natural sugar. Now if all this increase of sugar eating, both of the natural and artificial, had extended over two hundred thousand years instead of two hundred years the human economy might have developed faculties, or facilities, for its utilization. But what can Nature do in two hundred years to accommodate our system to such a change of conditions? Almost nothing. The only thing Nature can do is to kill us off as she is known to have done with lower forms of life in the geologic ages of the past

when the changes of environment were sudden and decisive. Medical treatment is powerless to prevent the disease and degeneration that is now going on as a result of the abuse of this new stimulant or poison. Our only hope lies in preventive medicine and in the education of the masses along hygienic lines. The evil begins its work in early childhood. The gout and diabetes of old age are prepared for in youth. The gall stones of middle age begin to form in early life. Our nation, although young, is already a nation of dyspeptics, neurotics and decadents, and our only hope is to adapt sanitation to the needs of modern conditions, and to commence with the child. Old fashioned rules and remedies are inadequate. Whether the sale of candy to minors will have to be made a punishable offense as is the sale of alcoholic drinks, I do not know; but if such a law were enacted together with one punishing parents who use artificial sweetening in the food of their offspring, and thus make dope fiends of them, much good might be done,—although the thought may seem humorous to many of us.

I wish right here to answer a criticism which is always made about the refusal of sweets to children. It is that children crave and digest sweets in large quantities and that therefore it is good for them. Children do utilize it in larger quantities than adults and should have relatively more of it to eat. The craving for sweets has a natural origin. It was given us to make us relish natural food. When starchy foods are chewed by a hungry person with plenty of saliva, the starch is converted into a form of sugar in the mouth. The mild, sweet flavor thus developed gives the food a relish and makes chewing pleasurable. This is Nature's way of prompting us to masticate our food. A small amount of starch is thus digested in the mouth for immediate absorption and oxidation, and suffices for the needs until the bulk of the food has time to be converted, absorbed and stored in the proper glands and tissues for subsequent utilization. But this natural taste for sweets can be corrupted the same as the natural taste for fruit juices can be converted into an unnatural fondness for wine, and finally for brandy or whisky. We are at last learning that the former universal esteem and liking for wine does not indicate that wine drinking represents a natural want and must therefore be good for us. The same of tobacco, the same of sweets, of opium smoking, of hasheesh eating—of almost any acquired taste, no matter how universal it may have become. The boy is father to the man and I suppose our diet, like our religion and our politics, is imposed

upon us by early prejudice rather than by the dictates of our matured judgment.

In summing up I would say that this excessive indulgence in sweets acts about as follows upon the public health:

The growing child is poorly nourished. It consumes too great a proportion of a food which, while stimulating bodily functions, particularly the mental, contributes almost nothing to the development and growth of the bodily structures. After acquiring a taste for sweetened foods the child loses the natural relish for ordinary articles of diet and refuses to eat them unless sweetened, and the appetite, being perverted, can no longer be depended upon as a guide to feeding it. When all, or nearly all of its food is sweetened in order to make it eat, then it eats from taste rather than from appetite and will fill its stomach with light or heavy food, with good food or bad, and whether it is hungry or not. It is overfed and becomes subject to indigestion and imperfect assimilation. This results not only in impaired nutrition and feeble resistance to disease, but in acute intestinal disorders which, not infrequently, prove fatal.

The adolescent sweet-eater is for similar reasons delicate in health. He suffers from occasional attacks of stomach and bowel disorder that pervert digestion and impair nutrition. On account of excessive acidity and fermentation he generally finds that acids, sweets, milk, eggs, fruits, one or all disagree with him or her (usually her), and he almost necessarily depends to a large extent upon meat as nourishment and thus is injured in time by an excess of proteids. If he does not do so he is liable to become anemic and below par in resistance.

The middle-aged man is in danger of his life from the effects of disease due to his earlier and continued indulgence. Just how much such diseases as gall stones, diabetes, inflammation and ulceration of the stomach and bowels depend for their origin or their aggravation upon the excess of sugar in our food is difficult to determine, but it is certain that many ingenious and abominable food mixtures that are made palatable and tempting by sugar, such for instance as pie, cake, rich pudding, imperfectly cooked bakery sweets, etc., are prime factors.

I will not take up your time in analyzing and describing the dire results of excessive sweet-eating upon the aged. Suffice it to say that they have come through life damaged and unable to digest the quantity their systems would normally require without suffer-

ing evil consequences. The old man needs less sugar than the young person, but he needs that little more since his digestion is slower and weaker, and must depend more upon food that is quickly and easily digested. He is preternaturally senile and if, by careful living, he manages to live almost as long as others, his usefulness to the community is less.

Thus by destroying children by acute disease, adults by chronic affections and old people by premature failure of the vital powers, the excessive sugar eating so prevalent today not only impairs the public health but shortens somewhat the duration of human life.

As an illustration of the subject I will partly outline a sample (not simple) sweet-eater's diet.

For breakfast: Fruit which contains its own sugar, sweetened by additional sugar; breakfast cereal, made palatable by sugar; coffee sweetened by sugar, or milk which contains three per cent of its own sugar; perhaps griddle cakes swimming in syrup. Many who do not eat griddle cakes eat marmalade or other sweets on muffins or hot bread or sweet buns or coffee cake.

In the forenoon fruits and candies are common lunches for the young and the fair.

For lunch: In addition to the vegetables or other things, a drink that contains sugar, such as coffee or tea, cocoa or milk; some sweetened fruit or preserves to eat with the bread or a sweet dessert.

In the afternoon perhaps candy, soda water or ice cream, or a five o'clock tea (sweetened) and cake or sweet crackers, for the young and fair.

For dinner: In addition to the meat and vegetables, a sweet dessert; probably a drink with sugar, sometimes an artificially sweetened fruit salad. Or if supper is eaten, preserves or sweetened fruit and sweet buns, or cakes or cookies.

On summer nights: Soda water or ice cream and cake for the young and the fair. At bedtime perhaps beer, or grape juice or fruit.

Some take candy or fruit or soda water or grape juice or ginger ale or a sweetened alcoholic drink between the lunches and meals mentioned above.

IMPORTANCE OF EARLY RECOGNITION OF PATHOLOGICAL CONDITIONS OF ADENOIDS AND TONSILS AND TREATMENT OF SAME.*

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Pathological conditions of adenoids and tonsils are probably responsible for more major and minor ailments in infancy and childhood than any other pathological condition known, and if not removed may be the source of serious after trouble. The importance, therefore, of an early recognition of a diseased condition of these organs is apparent from the following:

Thirty-three per cent of all children are afflicted with adenoids and diseased tonsils of more or less severity.

Ninety per cent of cases occur between the first and fifteenth year of age; but substantially all develop in infancy or in early childhood.

There are many cases of congenital hyperplasia, and a surprisingly large number of infants six, eight and ten months of age who have sufficient adenoid hypertrophy as to require operative interference during the first year of life. This class of patients always come first under the care of the general practitioner or paediatrist and for this reason I want to emphasize the importance of any early diagnosis and proper treatment, for it is the failure of early recognition on the part of the physician that is usually responsible for the serious results caused by prolonged neglect of hypertrophied lymphoid growths.

The hearing is impaired in a large percentage of cases. Klye says ninety per cent and Weakes says ninety-five per cent have some degree of deafness. Dench claims adenoids are responsible for more than half the pathological conditions met with in the middle ear, and that they are the principal cause of deaf mutism.

Other more or less lasting complications that may result are: Defective speech, listlessness, frequent attacks of amygdalitis, supuration of the middle ear, anaemia, headache and attacks of indisposition and nervousness. In marked cases there is frequently some deformity of the thorax, as narrow chest, chicken breast, etc. Frequently there is high arched palate and an abnormal nasal septum. Delavan says some of the worst septal deformities we encounter are brought on by this trouble.

Function: Normal adenoids and tonsils possess a distinct func-

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tion which consists of a certain irrigation of the tonsil surface by a lymph stream loaded with lymphocytes, this being nature's defense against the entrance of bacteria into the system. These organs, too, help direct the action of neighboring muscles and assist in modifying the resonance of the aural cavity.

By reason of their exposed situation they frequently become diseased and when hypertrophied become prejudicial to phonation, impair the normal resonance of the aural cavity, interfere with the action of important vocal organs, set up a catarrhal condition of the oropharynx, resulting in hypertrophy of the faucial pillars, plica and capsule, and in numerous inflammatory adhesions binding all these parts together in one conglomerate mass.

When diseased these organs are prejudicial to health, the open crypts forms a suitable nidus for the development of bacteria. It is known that nearly every variety of infection may pass through the tonsils and other portions of the pharyngeal lymphatic ring to the nearest glands causing them to enlarge. The open lymphatic net work gives free access to the absorption into the system of bacteria and their toxins, serving in this way as portals of entry for various pathogenic micro-organisms.

Therefore, tonsils of any size that are subject to repeated attacks of inflammation and contain occluded or dilated crypts filled with decomposing highly septic masses of epithelial or leukocytic debris and bacteria, are a menace, not only locally, but systemically. The latter phase of this subject is one of great importance and concern not only to the throat specialist, but to the internist.

As illustrations of general systemic infections following closely an attack of tonsillitis we have many instances where the evidence is conclusive, that the micrococcus that causes acute rheumatism with its complications and sequelae as endocarditis, pericarditis, myocarditis, streptococcic peritonitis, streptococcic pleurisy, pneumonia, lymphadenitis, myositis, neuritis, hepatitis, pancreatitis, iritis, scleritis, phlyctenular keratitis, gastroenteritis and very commonly paryenchmatous nephritis gain access into the interior of the body through this channel. I have not seen a case of endocarditis in the last ten years which could not be traced directly to an infection through the pharyngeal lymphatic ring.

Enlarged glands of the neck are invariably caused by infections from the mouth and pharynx absorption entering by way of the lymphatic ring. The faucial tonsils, the largest of the lymphoid bodies in this region, causes the greatest amount of infection. The surgeon

who fails to recognize the importance of this atrium of infection when dealing with the subject of enlarged glands of the neck is derelict in his duty to his patient.

Since 1895 there has been a persistent attempt made to prove by laboratory investigation the relationship between tuberculosis and disease of this glandular structure, some authors going so far as to attribute all forms of cervical adenitis to tuberculosis.

There are many instances of enlargement of the cervical glands of the neck of a non-tubercular nature and which are purely of toxic origin. In a large number of children presenting various degrees of adenoid and tonsillar changes, enlarged cervical glands are almost invariably found. Tuberculin tests, while showing many of them to be tubercular in character, still a large percentage give a negative reaction, thus demonstrating their non-tubercular nature in many cases.

In children the question of latent tuberculosis is of special importance. The frequency with which adenoids and hypertrophied tonsils are found in early life would incline one to a belief in the occurrence of this form of tuberculosis in children to the extent believed by some, but the infrequency with which definite clinical manifestations of this affection is found at this time of life is an argument against this belief.

An interesting feature in connection with glandular enlargement or general systemic involvement from tuberculosis or other infections which may have their initial lesion in the tonsil and is carried into the system through this channel, is, that it is not essential for it to be attended with a primary lesion at the seat of infection, indeed, the passage of tubercular bacilli through the tonsils is as a rule not followed by a change in these organs. Strassman, Koeckman, Friedmand and others may be quoted in this particular.

Having just studied the evil consequences that follow in the wake of pathological conditions of these organs in infancy and childhood, attention is now directed to etiology, symptomatology and signs, in order that we may the more early recognize their diseased condition.

The post nasal pharynx at birth is a space only one-fourth inch high by one-third inch wide. By the end of the first year this space is increased to nearly double this size. A slight hypertrophy at this period will cause obstruction, indeed a small amount of adenoid tissue in a small naso pharynx is more formidable than a greater

amount in a good-sized naso pharynx; thus, the dangers to infants and young children.

Etiology: There is present normally a certain amount of lymphatic tissue in the vault of the pharynx, fauces, base of the tongue, on the floor of the nose and in the mouth of the eustachian tubes. Histologically in many instances of adenoid and tonsil hypertrophy the growth differs in no wise from the normal lymphatic tissue, and aside from the symptoms produced by overgrowth it is impossible to say where one ends and the other begins. In other words, the normal lymphatic tissue in these positions has no constant size, but varies decidedly in different individuals, resembling in this particular its analog Peyer's patches, in the intestines. That the growths are then a hyperplasia and not a neoplasm, must be borne constantly in mind.

No doubt many constitutional factors must be considered with favor as predisposing causes of hypertrophy of this lymphatic tissue.

Heredity, not infrequently is a contributing factor as evidenced by the statements of various observers who have reported the presence of adenoids in infants at birth and the additional fact that many members of the same family are often similarly affected. The latter condition being frequently met with, the former, however, is rare and seems to play only a limited role.

Tuberculosis: The frequency of the presence of tubercle bacilli in the growth vary according to individual observers, being estimated by different authors at from three to thirty per cent, the former figure being probably the nearest correct. In cases of pulmonary tuberculosis tubercle bacilli is rarely found in the growth. The evidence is certainly not conclusive that tuberculosis is an etiological factor of importance and should be considered as acting only indirectly, that is, by lowering the vitality the same as poor hygiene, poor diet, etc.

Syphilis: Is not a common predisposing cause, except indirectly; by lowering the vitality and resisting powers of the individual the same as does tuberculosis.

Race: The Hebrew race is especially predisposed to this hyperplasia, on the contrary the negro is singularly free. This latter fact has been explained as being due to their flat, open nares, and the character of the palatine arch. Blond children are particularly prone to glandular enlargements and to lymphatic hyperplasias.

Scrofula or Struma: Was for many years the favorite and most plausible theory given as a causative factor of first importance, pre-

sumably because certain symptoms were recognized as peculiar to both, and the immediate deduction was drawn of a cause and effect. However, we find that in the majority of cases the symptoms of scrofula rapidly disappear on the removal of the diseased adenoids and tonsils, showing the process to be one of intoxication resulting from absorption from the diseased lymphoid tissue, due to insufficiency or failure of a particular secretion of the glands.

Inflammation at present is generally conceded to be the chief causative factor, catching cold, whatever that is, is characterized by acute inflammatory swelling of the lymphatic tissue of the throat, and repeated attacks leads without question to chronic enlargement. Infectious diseases must be regarded as common inflammatory cause. No doubt the hyperplasia was present before the onset of the disease, but the severe inflammation produced at the time acts as pronounced excitant and promotes further growth.

Diathesis: It is true in many instances that some diathetic condition seems to be at the bottom of a large number of cases, quoting Bosworth, there is what is called a lymphatic habit; or quoting Potain, "a lymphatismus," this means a particular susceptibility in children for lymphatic tissue to take on inflammation and so increase in size.

In view of all that has been said it is certain that in different families the resisting power to excessive lymphatic developments is less strong through certain embryonic influences in the child affected than in others, just as in a family one child will be weak while the others are all strong.

Ventilation: Irritating dust, gases, unsuitable clothing, unwholesome food and faulty feeding are common agents for harm. Poor ventilation is one of the chief etiological factors. Inadequate ventilation of houses, flats, and living rooms is a menace to health. Many people in a room, each rebreathing air that has been previously exhaled, is a menace to health. Every person requires 18 cubic feet of air an hour and in flats it is frequently impossible to get the required amount, the architecture being such that air does not circulate properly. They are not as well ventilated as houses, and are apt to be too hot or too cold. In New York the living is entirely in flats and it is from this city that we are getting the greatest collection of statistics showing the necessity of having to remove adenoids during the first year of life.

Symptoms in infancy are not those of adenoids in childhood. Enlargement of the gland often produces symptoms during the first

days of life, the mother or physician stating that the child has had snuffles since birth. Cases of this sort are frequently diagnosed as syphilis, but the other characteristics of syphilis are lacking. I have seen several such instances in my practice and in at least one of my cases, a child of six weeks, I had to remove adenoids so as to enable it to take nourishment from the breast. In this case the trouble was diagnosed as syphilis by a fellow practitioner, and when the possibility of adenoid was suggested he scoffed at the idea and stated that enlargement of adenoid tissue was never met with under three years and that he was so taught at a standard medical college, a statement I knew to be true. Very recently I learned of a similar case in the practice of one of my close friends where an operation gave immediate relief.

Snuffles when present are particularly evident when the child is nursing, but may occur during sleep if the child's mouth is kept closed. If the mouth is open when asleep snoring replaces the snuffles. It should be remembered that both snuffles and catarrh are more often due to adenoid hypertrophy than to syphilis; on the other hand, neither snuffles nor catarrh invariably accompany even a decided overgrowth of adenoid.

Snuffles result from an adenoid which produces irritation, and if it becomes large enough to obstruct the post-nasal pharynx we have the further symptom of mouth-breathing.

Mouth-breathing like snuffles may be due to other causes than adenoid hypertrophy, however, in children the main causes of nasal obstruction is adenoid and tonsil hyperplasia, and during the first year of life the obstruction is due almost entirely to the adenoid alone. In most of the reported cases of hereditary hyperplasia, the nasal cavities have been totally free, the symptoms of obstruction being due solely to the adenoid.

An early indication of this condition during the first year is the presence of repeated colds as evidenced by nasal discharge, pharyngitis, etc. A characteristic sign when present is an irritating cough, or a peculiar crowing sound especially pronounced at night; it is apt to be persistent in character, but may be paroxysmal and may resemble closely the paroxysm of whooping cough. Examination fails to reveal any physical signs in the pharynx or bronchi to account for the peculiar cough.

Another symptom is otitis media. It is not generally recognized how frequently it is due to adenoids. A child may have repeated attacks and still the adenoid may be very small, so small in fact that unless a very careful examination is made it will be overlooked.

Another symptom occasionally found in early infancy is colic, due no doubt to the fact that in its efforts to nurse, the child swallows large quantities of air. One only, or all of these symptoms may be present.

The soft consistency of the adenoid, its location and its glandular structure, predisposes it to constant irritation. The result is that even where hypertrophy does not take place, congestion and infiltration of the glandular tissue will allow it to increase in size to such an extent that there are intermittent periods of complete and partial nasal obstruction. A large adenoid growth need not obstruct all the time but is sure to obstruct some of the time.

In children two years of age and upwards, the symptoms are more or less constant cold in the head, catarrh, and a sero-mucous or muco purulent discharge from the nose. Acute rhinitis is rare in children and what is apparently a cold in the head is usually an aggravation of a sub-acute inflammation of the pharynx and tonsils. Usually they have a hacking cough, frequent severe colds, more or less continuous catarrh and sore throat. In long standing cases, the symptoms are nasal obstruction, mouth-breathing, frequent epistaxis, asthma, night sweats, headache, nasal voice, repeated attacks of catarrhal otitis media, purulent otitis, earache and impaired hearing, mal-nutrition, anaemia, narrow, sunken chest, with a history of snoring, nightmare, restless nights, etc. Great susceptibility to measles, scarlet fever, diphtheria, pneumonia, hay fever, frequent enlargement of the cervical lymphatic glands, various reflex symptoms as cough, laryngismus stridulus, incontinence of urine and a great variety of minor troubles. With change in the weather and similar causes all symptoms become exaggerated due of course to an increase or decrease of the distension of blood vessels in the tissues concerned.

In marked cases the diagnosis can often be made from the facial appearance. The clinical picture presented is characteristic and striking. The childish face devoid of expression, stunted growth, impaired mentality with dullness and stupidity, open mouth, drooping eyelids, vacant, dull, or stupid expression, contracted alae, narrow, sunken chest, pigeon breast, making it impossible to mistake the diagnosis. But in patients seen early the diagnosis is not easy, and to depend on the classical train of symptoms just given would be to let many cases pass undiagnosed until the general health, hearing and development might be everlastingly impaired.

In children and infants who have not the characteristic ap-

pearances just enumerated, adenoids should be suspected when a history of obstructive breathing through the nose, snoring, catarrhal symptoms, frequent colds, otitis, earache, inability to nurse and laryngismus are present.

In most cases there is impaired hearing. Kyle puts the figures at 90, and Woakes at 95 per cent. All authors admit that a high percentage of these patients have deafness more or less pronounced. Frequently the deafness is discovered by accident, patients presenting none of the symptoms of adenoids, for the reason that nasal breathing is substantially only interfered with when the adenoid hangs down over the margin of the choanae. A small growth over the upper part of the septum, not large enough to cause obstruction to respiration seldom gives rise to any symptoms aside from a constant secretion of mucus.

The various pathological conditions about the eustachian tube up to the present time has not received the serious consideration their presence demand, owing principally to failure of early recognition on the part of practitioners and paediatrists. We must impress upon these gentlemen the fact, that the commonest cause of serious changes in the eustachian tubes is obstruction, caused by lymphoid hypertrophy in the fossa of Rosenmiller, on the eustachian eminence, or in the mouth of the tube, and that obstruction hereabouts is extremely rare without disease of the surrounding lymphoid tissue.

Frequently where the pharyngeal vault is perfectly clear, a small adenoid mass situated in close proximity to the tube may cause obstruction and interfere with ventilation of the tympanum and cause catarrhal changes in the tube itself resulting in middle ear catarrh with tinnitus, or suppuration and subsequent deafness.

The faucial tonsils too, especially when the velar lobe is greatly enlarged by pressing on the eustachian tube from below interferes directly with free ventilation of the middle ear, and in other instances where the eustachian orifice is located quite low down and directly back of the posterior faucial pillars, it is subject to pressure from even moderately enlarged tonsils. A good rule to remember is whenever you find faucial tonsils in a state of inflammation or hypertrophy you will positively find a pharyngeal tonsil in like condition, whether this pharyngeal hypertrophy be much or little it is more important that it be removed than the faucial tonsils.

Inspection reveals the faucial tonsil nearly always enlarged. There is also seen a mucous or muco purulent discharge running

down on the posterior pharyngeal wall just back of the uvula and soft palate. If the child is held before a strong light the tongue depressed and the uvula lifted with a palate retractor occasionally a very good view of the pharynx is obtained. Again, with the pharyngoscope the adenoid can frequently be plainly seen and studied in situ.

In small children where adenoids are suspected and where inspection fails to reveal their presence, and where for some reason the pharyngoscope or laryngeal mirror cannot be satisfactorily used, the suspicion is confirmed when by digital palpation of the vault of the pharynx there is felt a soft mass which bleeds easily, usually leaving a blood stain upon the finger, no matter how much gentleness has been exercised. The rough surface of the adenoid is quickly detected by one accustomed to making this examination.

In order to make the examination have the child held with its head against the left shoulder of the nurse, the right arm of the nurse holding the hand and the left hand holding the forehead. The left thumb of the examiner is pressed against the right cheek of the child pushing the buccal mucous membrane between the teeth, the ends of the fingers of the left hand grasping the right side of the lower jaw, a firm grip is obtained which makes it impossible for a child with teeth to bite the finger of the examiner. The right index finger is used for passing through the mouth into the post nasal space, or, if this is too small to admit the index finger, the little finger may be tried.

It is better not to make a digital examination if the diagnosis can be established without, since it is usually more or less painful and frightens the child, but if it must be done it should be done quickly as rapid manipulation avoids resistance and disturbance. The above suggestions do well in examining children over two years of age, but the presence of an adenoid in small children and infants is not so readily determined on account of the small space in the post nasal pharynx, being so small in most instances as not to admit the finger being introduced, the diagnosis in this class of patients must be made from symptoms alone.

In adults and older children where the growth fails to disappear at maturity the character changes from that of childhood. Inspection shows the usual highly arched palate with the "adenoid fringe" or its remnants and the fauces and pharynx covered with a slimy, sticky mucus. There is enlargement of the lingual papillae and nodules on the posterior wall "granular pharyngitis." The

tonsils are usually sclerotic, the examining finger reveals the growth to be of a more fibrous nature than in children, the real size is deceptive and there is always more of the tissue than would appear from examination.

Prognosis: Conditions tend to right themselves at puberty; however, it is not uncommon for this lymphoid tissue to remain abnormally large after this period, thus serving as a permanent cause of naso pharyngeal catarrh. As a rule, the prognosis is good unless much damage has been done to special organs or special senses or to the general health or development of the child. If damage has been done, the prognosis will depend largely on its kind and extent. In cases demanding radical treatment, once the offending mass is removed, ear changes and other conditions retrogress, and frequently normal or nearly normal condition results.

Parents should not be informed that following the operation the child will be entirely relieved of the symptoms such as head and ear troubles, etc. Too, parents should be warned that it is always possible for a child to have an acute infection of the naso-pharynx without any demonstrable amount of tonsillar tissue.

The change in the voice which is feared by the lay people and vaguely by some authors rarely if ever occurs.

Singers whose training and quality of tone has been produced with hypertrophied tonsils should be warned of the possibility of some change of the quality of tone, due to unaccustomed action of the palate muscles. Usually the quality of the tone is much improved.

Treatment: An acute adenitis, due to cold which was not preceded by adenoid symptoms, may occasionally disappear on hygienic treatment. In cases of some duration there is no value in sprays, applications or internal treatment. In chronic cases operation is the only treatment that is of avail, providing it is not done too late. The operation should always be done early and not subject the little patients to the grave results which is sure to follow the long continued presence of these growths.

When to Operate: Do not operate where tonsils are simply somewhat enlarged if normal in other respects and which are producing no symptoms.

Do not operate in every case of adenoids, but in only cases where there is evidence of obstruction or some definite interference with health. Do not operate in every case of simple swelling of the pharyngeal tonsils or in simple otitis for the symptoms are fre-

quently only temporary and will disappear without operation. Unless the indications are very definite do not operate during the first year.

Operate when the tonsils by their size nearly fill the cavity of the pharynx and as a result there is impairment of voice; whenever the lymphoid tissue is hypertrophied to such an extent that harm has, or probably will result in impairment to the general health; when there will result permanent impairment of any of the organs of special sense, in repeated attacks of otitis media, in case of phlyctenular keratitis, iritis, scleritis when other methods fail and where the patients suffer from recurrent attacks of tonsillitis or adenitis.

Operate in cases of repeated attacks of peritonsillar abscess, in repeated attacks of tonsillitis when the attacks follow closely in succession; when chronic inflammation is a source of constant irritation; in reflex cough; when inflammation of the gland is repeatedly followed by cervical adenitis; where there is general systemic infection; when by hypertrophy and swelling there is obstructed breathing; when there is closure of the eustachian tubes with attending ear pain, middle ear inflammation, deafness, etc.

Operate when there is general anaemia; swelling and suppuration of the cervical glands; in cases of articular rheumatism and complicating endocarditis, where the tonsils are probably an etiological factor. In tuberculosis; in chronic bronchitis in children; when a patient suffers from recurring adenitis or tonsillitis; in parenchymatous nephritis; hepatitis; pancreatitis, gastro intestinal disturbances which are aggravated by acute attacks of the chronically inflamed tonsils.

Operate always to remove foci of infection and to restore the functional efficiency of the respiratory, phonatory and articulatory organs.

Operate in all cases of underweight in children in which organic disease can be excluded and in which there is evidence of diseased adenoids or tonsils. Operate in all cases where there is a persistent temperature of from 100 to 101 F. apparently due to the presence of disease of these organs. Operate as early in life as there is positive evidence that the adenoid hypertrophy causes persistent symptoms.

Operation: Diseased conditions of these organs should be recognized as soon as they produce permanent symptoms and should be operated thereafter as quickly as possible, so as to avoid marked

systemic effect. If a permanent result is to be expected, the operation should be as complete as it is possible to do it. Masses of lymphoid tissue should not be left hidden either in the nasal pharynx or between the pillars of the fauces. In other words, the operation of choice is tonsillectomy and adenectomy.

Anaesthetic: An anaesthetic and at least one competent assistant are essential, excepting in certain cases. In small infants the question of anaesthesia is more or less a question of the desire of the parents. If left to me I do not advocate it in operating on infants, in this way you avoid the danger of the anaesthetic.

In the choice of an anaesthetic there is but one thing to be considered, safety. Chloroform I consider extremely dangerous in all throat and nose operations. Ether is the only general anaesthetic advisable being free from danger, effective and in the hands of a skilled anaesthetist only a little more troublesome than chloroform. Statistics gathered by Packard is conclusive showing that ether is the safer of the two drugs. He found 29 deaths recorded as a result of the anaesthetic given for tonsil operations of all kinds, of which 26 resulted from chloroform, two from ethyl chloride, and one from A. C. E. mixture and none from ether. (Ether is contraindicated in tuberculous abscess or other diseases of the lungs.)

The table on which the operation is to be performed will vary in height according to the stature of the operator; one four feet in height makes it convenient for the operator to sit at ease during the operation. In order to bring the pharynx into a plane lower than that of the larynx the head end of the table should be lowered so as to have it about ten inches lower than the foot end. This inclination is such that the blood can be sponged out before it is swallowed or sucked into the trachea.

The desiderata of complete obliteration of diseased tonsils are: 1st, an effective illumination of the field of operation; 2d, a degree of separation of the tonsil from the surrounding tissues that will render the gland pendant.

Illumination is best obtained by a head lamp (preferably Kirstein), of some description where electricity can be used. Most of the lamps used by a general surgeon are unsatisfactory as they leave the operative field in shadow. If for any reason the special lamp cannot be used sufficient light may be reflected from a large electric bulb held by an assistant on the opposite side of the table. In order to meet any contingencies such as the burning out of the more complicated illuminating contrivances, a large electric light bulb with

sufficient cord should be carried by the operator. These lights require no current controller, can be attached to an ordinary light socket and furnish sufficient light for emergency purposes.

Where both tonsils and adenoids require removal and where a general anaesthetic is to be employed, the patient is placed in a lateral position lying on his side with the arm underneath drawn out behind his back, the body turned somewhat toward the operator so that he rests partly on his chest, his head lying on his cheek at the very edge of the table, his body being held strongly backward by an assistant. In this position the blood runs out of the mouth and does not enter the air passages. The operator takes his position at the side, the anaesthetist his at the head of the table. In this position the operator with a depressor controls the tongue, regulates the breathing and requires the assistant to handle the anaesthetic and the gag through the entire proceeding, and the forceps only during the last stage of the operation.

The gag, the blades being covered by rubber as a protection to the teeth, should be inserted on the side of the tonsil to be removed, and held well between the back molars. For the excision of the right tonsil the patient lies on the left side and conversely, the uppermost tonsil being the one cut out, so that the blood will flow downward out of the way of a view of the operative field.

Technic: Technic is largely a matter of choice. Some men develop a certain technic along one line and some another. Of the various methods advocated or brought forward in the last five years the operator should select that one which combines simplicity of technic with completeness and a minimum of traumatism. The dangers of tonsillectomy, hemorrhage, shock, traumatism and death from anaesthesia, diminish greatly with carefully selected equipment and technic. The operation being a delicate procedure requiring an abundance of time and attention to the details of technic should not be lightly undertaken by everybody.

Since the complete enucleation has been advocated, a great number of general practitioners and specialists have attempted to change their methods, and in learning the new operation the pillars have been damaged, the patients frequently being worse off than before operation. If surgeons, ophthalmologists and general practitioners must remove tonsils, they are advised to do a tonsillotomy until they may receive instructions in the details of complete enucleation.

Indeed, it is not always essential that a complete enucleation

should be made. Crockett is correct when he states that in ordinary cases of simple hypertrophy it is unnecessary to remove the base of the tonsils, for a perfect result may be frequently obtained by removing enough of the tonsil to bring it down to normal size, so as not to project beyond the pillars. This may be done either with a snare, tonsillotome or punch. In simple hypertrophy the operation of safety is always tonsillotomy, until such time as the physician becomes familiar with proper technic required for enucleation.

Enucleation: When done under local anaesthesia, either sharp or dull dissection may be used because of the more perfect control of the field of operation. Where a general anaesthetic is to be given it should be done by blunt rather than sharp dissection, excepting perhaps in the hands of a few operators who have obtained special accuracy in dissection with sharp instruments.

Separation and removal should constitute two distinct steps. Illuminating the oral cavity with light from the head mirror, the separation can readily be done by incising the tissues with a Freer knife between the anterior wall of the tonsil and the pillar just below the inferior border of the velar lobe, a blunt dissector is then passed through this incision and swept up and down, thus separating the tonsil from the anterior pillar. The dissector is then passed over the top of the tonsil, at which point the operator should be careful to remember that the upper level of the tonsil is considerably above that of the velum palati. The dissector is then carried downward between the tonsil and posterior pillar; no traction is made upon the tonsil during this dissection.

The next and most important step in the operation is the dissection of the velar lobe out of its bed in the soft palate. Important, because experience has taught us that subsequent successful results of all tonsillectomies is in direct ratio to the more or less complete removal of the velar lobe. Thorough enucleation of the velar lobe is best accomplished by pulling the tonsil strongly inward and downward with a Velsellum forceps until the velar lobe becomes visible, when it can be severed with a sickle shaped knife (Tydings) from its attachment to the palate. Frequently a satisfactory enucleation of the velar lobe can be done by inserting the finger in the incision made when dissecting the plica triangularis from the anterior pillar passing the finger upward and releasing the velar lobe from its bed.

With a good Velsellum forceps take a deep hold of top and bottom of tonsil, then draw well forward free of the pillars. A ton-

sil snare, previously threaded with a number five or six steel wire, is now slipped over the gland and the snare drawn home gradually through the small attached portion, the gland usually coming out in its entirety with scarcely any traumatism. The tension outward being continued during the entire process, the deeper blood vessels have been avoided by the elevation of the tonsils.

Enucleation with the finger should be done when possible. I have done it several times by simply continuing the separation stage of the operation when the tonsil is found tough and fibrous. While impractical in a large majority of cases it should, however, be attempted when the tonsils are sufficiently firm for its accomplishment, the attempt should at once cease if the pendant gland crushes under pressure instead of rolling and turning about under the finger.

After removal a good-sized gauze sponge on a curved hemostat is inserted into the space between the pillars and pressure made while the anaesthetic is again administered, preparatory to removal of the other tonsil. In rare cases, where hemorrhage persists beyond four or five minutes, the tampon can be removed and a smaller one dampened and dipped in powdered desiccated alum and held firmly in the tonsil bed. Patients should always be kept under the anaesthetic until hemorrhage stops.

Before the patients leave the table, examine carefully to see that no portion of a lobe of the tonsils has escaped dissection and if so, seize the portion with a punch forceps and remove the fragment piecemeal.

When dissecting the gland the operator alone can sponge efficiently and he should do so as often as the blood covers the field of work. If done quickly the patient need swallow no blood nor be embarrassed in his breathing, except when holding a tampon on the bleeding gland, although the operator has pressure on the gland, the etherizing can proceed for the work can be done by easy stages and with light anaesthesia.

If adenoids are present let them be removed after bleeding from tonsil stops. In infants and young children if only adenoids are to be removed the operation can be done without an anaesthetic and with very little shock to the child, in fact it can be done practically as painlessly as making the ordinary examination.

For the purpose of operation an assistant is necessary to hold the child, while a nurse should be present to assist. The child should be wrapped tightly in a sheet which binds the arms to the sides and should be held upright by the assistant with the back of

the head of the child against the assistant's left shoulder, one of his arms pressing against the arms of the child, the other hand pressing its forehead back against the shoulder.

A gag is now introduced which is held by the nurse while the operator holds down the tongue, he then passes a Gottsein, La Force or Schutz curette to the posterior nares, bringing the blade of the instrument as far up and as far forward as possible, then first by a backward followed by a downward movement. In most instances the entire adenoid can be removed with one stroke of the blade. The fossa of Rosenmiller should be explored by the finger and a small Vogel's adenoid curette to be sure that no lymphoid tissue is left at this situation. The one essential thing in young children is to avoid getting an infection of the eustachian tubes; therefore, operations should be done under the strictest aseptic precautions. The child is then put to bed without a pillow, lying on the side with the face forward, and the nurse is supplied with a spray containing 1 to 5,000 adrenalin, to be used in case of hemorrhage, in which case the child should be placed with face upward and the adrenalin sprayed through the nose.

On the day following the operation the majority of patients have from 1 to 2 degree elevation of temperature. With few exceptions they complain for three or four days of painful deglutition and some pain in phonation and it takes from 8 to 10 days for the fibrinous deposit covering the wound to clear off.

As to the results of this operation, a slight increase in the snuffles may be present for a few days.

After Treatment: Rarely is any after treatment required for the first two days, then a mild antiseptic spray of saturated solution of boric acid with five per cent of alcohol to prevent infection of raw surfaces. If there is much bleeding the mouth can be kept clean and bleeding stopped by spraying the mouth and nose with a five or ten per cent solution of argyrol or protargol.

Accidents and Complication During and Following Operation: Probably the greatest source of anxiety during the operation is found in the bleeding. In most cases hemorrhage is controlled easily, in some instances the flow of blood is checked with difficulty. Usually pressure with gauze or the application of the tonsil clamp will control hemorrhage, or in the absence of the latter, gauze dipped in persulphate of iron powder and applied directly over the bleeding point by means of a curved hemostat, will stop ordinary bleeding in from five to ten minutes. Failing in this, find the bleeding point

by retracting the anterior pillar and grasp it with a hemostat, the pressure of which will stop bleeding unless a large vessel has been divided. In the latter case the vessel should be ligated with cat-gut suture.

Secondary Hemorrhage: Is occasionally met with and like primary hemorrhage can usually be controlled by pressure; failing in this we must resort to more radical measures. First, we should try to suture the pillars over a roll of gauze. This can be done by a small curved needle, suturing the pillars from behind forward. When all the above means fail the common carotid artery must be ligated.

Sepsis: Sepsis has been met with in a few cases and emphasizes the importance of thorough asepsis both before and after operation.

Ether pneumonia, acute mastoiditis, acute meningitis, are complications occasionally met with and emphasizes importance of thorough equipment and technic.

Recurrences: Recurrences have a medico legal aspect which is of vital importance at the present time. That infants and children operated on early, even when the operation has been thoroughly done, have recurrences is authenticated by the statements of numerous authors, as for instance Cohen, Jacobi, Freeman, Ludlum, Harris, Potain, Luellum, Delavan, Jaresky, Glogau, Hopkins, Gorke, and others.

Freeman sizes up the situation as follows: "Recurrences are due largely to the predisposition on the part of the child to produce adenoid tissue and not to defective operation."

Felix Cohen: "While thorough removal is occasionally followed by recurrence, it is only in from three to seven per cent of cases."

Jacobi: "Recurrences are not always due to imperfect operation but to careless after treatment."

Ludlum: "Babies operated on early, even when the operation is thoroughly done, sometimes have recurrences. This, I think, is the reason for the indisposition on the part of specialists to operate up to two years of age."

Harris: "The protective function of the tonsil carries with it the inherent qualities of the tonsil to enlarge on the slightest irritation for the affording of further power of defense. This inherent tendency of the tonsil to enlarge is further seen in the frequent recurrences of the tonsil after removal. Up to the time of Hopkin's paper it was generally held that such recurrences do not take place. We now know that it is by no means uncommon."

Gorke discusses this subject in an exhaustive manner, especially from a histologic standpoint. After stating the two commonly held explanations for the recurrence, viz., malignancy and imperfect operation, and giving convincing proof that neither of these reasons can be the cause in the majority of cases, he shows that the structure of the growth resembles in the main that of ordinary pharyngeal hyperplasia, but differs in this particular, "that a sharp line of division of the different layers is not possible."

Personally, I have seen secondary hypertrophy of tonsils and adenoids following operations done by several of our leading laryngologists. In some instances I witnessed the primary operation to know that it was thoroughly done. During the last year I have seen two patients where secondary hypertrophy occurred and where the operation was done by a physician of note, who, on every occasion, proclaims in public he had never seen a recurrence in a case where he did the original operation.

As a result of experience along the lines indicated I have arrived at the following conclusions: First: That no matter how skillful the operator, it is impossible by any method known at the present time to remove every particle of lymphoid tissue in either the pharynx or fauces.

Second. That the remaining particle of glandular tissues, be it even microscopically small, is capable under certain conditions of assuming a degree of hypertrophy equal to the original growth.

Third. That under favorable conditions a certain percentage of operated cases a secondary hypertrophy of the lymphoid tissue in the pharynx will occur, no matter by whom the operation is done or how thoroughly he may think he has removed all glandular tissue.

Fourth. The reason, perhaps, that we do not see more recurrences among our own operated cases is because when the obstruction recurs patients are likely to seek another physician, and that when we do see secondary hypertrophy in the other fellow's patients, we are inclined to believe that the primary operation was not complete. We should also remember that the other fellow is thinking the same of our cases.

In this connection I will report a case which illustrates beautifully the whole situation as I view it: A boy four years of age, complete tonsillectomy and adenectomy, June, 1909, operation done by a laryngologist whose skill, ability and reputation is secondary to none; examination following the operation and six months later

reveal no glandular tissues; child remained free from all symptoms for a year at which time hemming to clear the throat was noticed; examination revealed a small piece of glandular tissue half the size of a pea located about the middle of the posterior pillar of the left tonsil. The throat symptoms continued to increase in severity and the glandular tissue to grow until at the end of another year it assumed a size as large as the original tonsil, filling the space between the pillars completely, so far as inspection and external appearances went it was a complete reformation of the tonsil. At the second operation no other glandular tissue was perceptible in the throat. Four months later a bud of glandular tissue appeared beneath the margin of the palate in the space occupied by the velar lobe on the right side. During a recent attack of diphtheria this glandular tissue assumed considerable proportion. At this time also a smaller mass appeared in a similar location on the left side. Since the subsidence of the inflammation, due to diphtheria, the glandular tissue on the right side remains about the size of a cherry and that on the left about half as large as the right. Therefore, glandular hypertrophy began in the faucial tonsil one year after the original operation and in the velar lobe of both tonsils not until two years after the primary operation.

15 EAST WASHINGTON STREET.

THE TREATMENT OF TUBERCULOUS JOINT DISEASE
WITH CARL SPENGLER'S "I K." SERUM, WITH
A REPORT OF SIX CASES.

By JOHN L. PORTER, M. D., and L. CARDINAL QUINN, M. D.,
CHICAGO.

About four years ago Carl Spengler demonstrated that the agents of tuberculosis immunity are primarily produced within the red blood corpuscle itself, and are present in the blood serum only as a result of the breaking up of the erythrocytes and subsequent physiological change of habitat.

Upon the degree of production and liberation of these immune substances, which are polyvalent antitoxins and lysins depends the extent of curative power.

Dr. Spengler has demonstrated microscopically that in the presence of the tubercle bacillus, in correct dilutions, the lysin dissolves the sheaths from the bacteria and completely or partly disintegrates the bacillus and the antitoxic property, then neutralizes the toxins, thus ultimately reinforcing the physiological phagocytic action of the leucocytes to which the dissolved bacillus falls a more ready victim.

The excessive liberation into the blood of these substances produces lytic symptoms in accordance to their degree of liberation. Evidence of lytic symptoms are manifested by an increase in the temperature, cough, sputum discharge and general physical discomfort.

The difficulty lies in determining the dosage so as to regulate the production of antitoxic and immune substances in quantities that will destroy unfortified, tubercle bacilli and not liberate enough excess to harm or burden the patient with lytic symptoms.

This explains nicely the success some have had in treating early pulmonary cases, for here the focus is in the soft tissues with a complete mechanism of minute circulation and nature has not had time to construct her usual fibrous fortification around the place of disease.

But in chronic tuberculous conditions of the lungs and especially the joints, any curative agent that depends upon the lymphatic or blood circulation for its distributions encounters more difficulty in reaching the focus because of the connective tissue organization which has taken place.

Toxic influences, chemical irritation from debris and tissue insults from the trauma of movements all predispose towards keeping the inner structure of the joint in a constant state of hyperemia,

which ultimately leads to the proliferation and hypertrophy of connective tissue, followed by the subsequent shrinkage of this connective tissue.

It is obvious then that one would in this class of cases expect to see a much more rapid rate of improvement in the general physical condition than in the local, because the immune antitoxic substances will neutralize the toxins as fast as they are liberated into the circulating blood, while the blood thus relieved would begin its insidious work of breaking down and absorbing the fortifications built around the foci of disease.

This reasoning would suggest that in treating with I. K. serum chronic tuberculous joints and sinuses, which always have thickened walls, exuberant granulations and low grade inflammatory exudates, one would expect to carry the treatment over a period of several months before securing marked local results.

I. K.

I. K. (Immune Korper) is an extract from the red blood corpuscles of previously immunized sheep or rabbits and put up in bottles of 1 c. cm. which contains one million lytic and antitoxic units.

These bottles should be kept in diffused light and in upright position, as capillary attraction tends to waste some of the contents even in defiance of the most accurately fitting stoppers.

A special glass syringe is provided for its administration with a capacity of 1 cm., which is divided in 10ths and 20ths.

METHODS OF ADMINISTRATIONS AND DOSAGE.

The first dose varies from 0.1 to 0.2 of a c. cm. of the 5th to 7th dilution, depending upon the age of patient, severity of the case, degree of temperature and general physical condition. As a rule the younger the patient and higher the temperature, the greater the dilution. It is given at intervals of four to six days, and increased from 0.2 to 0.4 c. cm. per dose until 1 c. cm. is given of that dilution. Then pass to the next highest beginning at the minimum 0.1 or 0.2 cms. of that dilution and increase as formerly and so on, until 1 c. cm. of the original solution is given and repeated as often as necessary.

It is exceptional that this routine can be carried on without exciting lytic symptoms. Should this occur the patient should, after a few days, be given what is termed "relieving injection," i. e., again begin at the primary dosage and dilution or lower and increase from this point up as formerly.

Dr. Spengler states that in certain uncomplicated cases of strictly localized tuberculosis a process of rapid immunization may be resorted to. This is accomplished by increasing each dosage one-tenth of the next stronger dilution up to original solution. Few cases can tolerate this method.

The diluting solution is made as follows:

Sodii chloride c. p.	0.5
Carbolic acid	0.5
Sol. soda carb.	4.4
Distilled water	100.

TECHNIQUE OF DILUTION.

Dilutions are made in the following manner: The needle of the previously sterilized syringe is introduced into the original solution and 1/10 cm. of I. K. is drawn into syringe. Fill the remainder 0.9 c. cm. with diluting solution, pull down piston to admit air bubble and invert syringe to mix solution. Now force out all except 1/10 of this dilution and again dilute to 1 c. cm. and continue thus to the dilution desired.

Considerable economy can be practiced by only drawing 1/20 of 1 c. cm. of the original solution into syringe and diluting to only 0.5 c. cm., mix, reject all but 1/10 c. cm. and then dilute in the usual manner to strength desired.

If treating a number of cases at once this first dilution can be saved in small numbered bottles and taken up as the supply of higher dilutions are used. But when the dilutions are thus saved it is well to use them soon as possible as they will only remain active about 1 hour.

PRELIMINARY REPORT OF 7 CASES OF TUBERCULOUS JOINTS TREATED WITH I. K. SERUM.

1. G. Age, 9; weight, 47 pounds; 13 injections. Hip disease, 5 years. Two very active sinuses. Patient looks toxic and somewhat amyloid. First injected February 4, 0.2 of 7th dilution.

Patient began to improve at once, appetite better and sinuses discharging less. He was injected twice per week, increasing 0.2 c. cm. to a dose. Third week the child suddenly lost all desire for food, became very restless and complained of insomnia and pain in neighborhood of sinuses. After withholding the serum 10 days all symptoms moderated, and we again resumed the injections, using only half the former dosage at 7-day intervals. The patient again responded to the treatment by an increase in appetite, lowering of temperature, and

being entirely comfortable. At present his lips are red, cheeks full and rosy, sinus discharging only about one-half the amount formerly and this is of a thin, muco-purulent character. He gained 5 pounds, 12 ounces.

Case No. 2. D. G. Age 6 years. Tuberculosis of left hip and right knee of 3 years' duration, during last six months prior to injection was failing very rapidly, marked amyloid evidence in skin, ears, pale lips, etc. Eight profusely discharging sinuses; 15 injections. Leg and knee extremely painful. Slightest touch or jar causes him distress. First injection January 25, 1911, 0.2 c. cm. of 7th dilution. Third day after first injection leg and knee were entirely free from pain. It subsided like magic and was a matter of comment by the nurse. Examination and moderate flexion causes him no discomfort. Marked decrease in the discharge of all sinuses. Sixth day after first injection two sinuses on left leg dried up. Fourteenth day third sinus about closed and an astonishing improvement in the patient's general appearance. Lips and cheeks red and full, patient eating and sleeping well. Prior to first injection anorexia was usually the rule. Discharge markedly decreased, patient gained 4 pounds 2 ounces. All amyloid evidence has disappeared and patient now looks the picture of perfect health.

May 10, 1911. Patient still appears to be in perfect health. Two sinuses slight discharge. Gained 3 pounds. Treatments discontinued.

November 20, 1911. A letter from the superintendent of the Convalescents' Home for Destitute Crippled Children says O. G. has 4 sinuses, one practically healed, others discharging very little. Appetite good. Color splendid; has gained 5 pounds. Temperature, 98.6, 99.4.

3. J. S. Eight years old. Tuberculosis of knee joint. Duration, 5 months; 0.2 c. cm. of 7th dilution increased twice per week. No sinuses; 12 injections in three months. Second day after first injection pulse dropped from 98 to 64 in four hours, but patient seemed comfortable. Three weeks later patient showing wonderful improvement in every way. Nurse reports that now she cannot give him enough to eat.

Removed cast two days later. Knee promptly became tender, painful and flexed, necessitating a posterior plaster splint. All attempts to increase dosage at usual rate from now on caused sub-normal temperature and intermittent pulse. General improvement followed reduction of dosage and later increasing it more slowly. Gained four pounds.

November 20, 1911. Patient removed by parents; no further observation.

4. J. B. Thirteen years old. Tuberculosis of hip spine. Duration, 9 years. Apparently cured 2 years ago, but signs of recent recurrence in spine. No sinuses; 10 injections; two and one-half months treatment, starting with 0.2 c. cm. of 6th dilution and increasing 0.2 to 0.4 c. cm. per dose twice weekly. Up to third week the patient responded markedly, the appetite became better, fever lower and felt more comfortable. In third week complained of sudden pain in all the locations of active and past disease. Temperature high and irregular. Extremely uncomfortable. Patient lost four pounds. Reduced dosage to 0.2 c. cm. twice per week. Symptoms moderated somewhat. Two weeks later patient still losing weight, reduced dosage to 0.2 c. cm. once per week. Patient began to respond at once. May 1, 1911, is eating well; temperature moderate; color good. Gained 4 pounds 2 ounces.

November 20, 1911. No further observations.

5. C. S. Eight years old. Tuberculosis of right ankle. Duration about two years. Three very active sinuses. The ankle, during past six months, prior to I. K. administration, showed no disposition towards improvement, gradually getting more painful. Opening of sinuses and improved drainage did not improve conditions; 11 injections with I. K.; three and one-half months' treatment. First injection 0.2 c. cm. 7th dilution twice per week.

The very irregular temperature which was present before we injected him with I. K. became even more irregular after the third injection. Within a few hours it would jump from a morning sub-normal temperature of 96 degrees or 97 degrees to 102 degrees F. or more and frequently show a sudden remission during the day. All the subjective symptoms were increased to an alarming degree, the pulse became of poor volume and decidedly intermittent. At one time the nurse reported a bradycardia of but 42 per minute. Another week's injection resulted in yet greater irregularities of pulse and temperature. Anorexia was complete. Pain and restlessness were constant and the patient complained of pain and inability to move the right shoulder joint for the *first time*. Due to the comparative rarity of tuberculous involvement of this joint we were interested to know if the lysins were giving an early diagnostic reaction. The pain was so great that the shoulder was put up in plaster. A relieving injection of 0.2 of the 7th dilution was given and the injections reduced to once per week. All symptoms subsided with exception of irregular

temperature. Ankle became swollen, extremely painful, tender, slightest movement causing pain.

The sinuses were discharging profusely. At the suggestion of one of the authors we discontinued the digitalis, which was given in small doses to all cases, thinking this might have some influence on the striking heart irregularity, but, like the temperature, it continued. We discontinued the I. K. injections. During the next 10 days a cold abscess, about the size of the patient's fist, formed in anterior axillary region, neighborhood of pain during the severe lytic distress.

Four weeks later, in the presence of a still irregular temperature, we again commenced with a relieving injection, which seemingly at once added to his comfort.

The abscess gradually absorbed, all evidence having disappeared in 26 days. Appetite better. Less discharge from sinus. Temperature yet irregular. Gained $11\frac{1}{2}$ pounds since last weighed. Treatments discontinued to send patient to the country.

At present he is eating well, entirely free from pain, sinuses discharging freely, but can stand an examination or flex foot slightly without any discomfort. Gained $11\frac{1}{2}$ pounds.

November 20, 1911. One month after last injection. A letter from superintendent of Convalescent Home for Crippled Children states that C. S. is getting some color in lips now. Appetite good. Temperature, 98.6, 99.4. Swelling and inflammation all gone from ankle; sinus discharging slightly. Has gained $6\frac{1}{4}$ pounds.

6. S. P. Five years old. Tuberculosis of right knee. Duration less than 1 year. No sinuses; 18 injections in $3\frac{1}{2}$ months, beginning with 0.2 of 7th dilution and steadily increased 0.2 c. cm. twice per week. Six weeks after first injection patient had gained 7 pounds and his general physical health showed so much improvement that we removed the cast from his knee to inspect the local conditions and found but little swelling, no pain or tenderness and knee could be flexed to about ten degrees. We continued injections.

Seven days later patient began to show dark circles under eyes. Temperature irregular and slight anorexia. Knee became painful, tender and began to flex, necessitating another cast. Patient lost 5 pounds. Dosage reduced to 0.1 c. cm. once per week. A few days later the symptoms moderated. Since then all the lytic symptoms have disappeared. He is eating well and is comfortable. Lips red and full. Has gained back four of the pounds he lost during the lytic disturbance. Some evidence of dark circles under eyes at times. Urine negative.

Parents removed patient. We have had no further opportunity for observation.

CONCLUSIONS.

1. Our present knowledge of calculating the dosage is inadequate. Better results can be gotten when the dosage has been perfected.

2. We have found Dr. Clarence W. Leigh's suggestion of but one dose in 7 or 8 days to be more satisfactory than the more frequent dosages.

3. Under the management of the inexperienced the most common and most detrimental error will be too large a dosage.

4. Marked disturbance of the patient's comfort is the best guide for reduction of dosage. Too great a desire to rush the treatment will usually rush the patient into discomfort or misfortune.

5. Contamination must be guarded against. Fifteen minutes boiling of syringe, needle, medicine glass to hold diluting solution and small bottles for excess dilutions, and cleaning the arm with alcohol, will insure safety. Red heat of platinum needle from alcohol lamp permissible.

6. The posterior extensor surface of the forearm, while the arm is held in flexion, is the most convenient and least painful site for injection. Close skin puncture with collodion and cotton. Children seldom complain of the procedure if the solution is injected slowly.

7. Tr. Digitalis or Strophanthus should be administered through the entire treatment. Tuberculous patients with severe or advanced organic heart lesions should not be treated with I. K. until entire compensation has been restored, and then only while in bed, and under the greatest care and conservative dosage.

9. Jumping to 10-fold dosages is both dangerous and unnecessary. It is exceptional that a case can tolerate increase.

10. When rapid immunization is desired we believe that it is better to begin with a small dose of a higher dilution (4th or 5th) then after an interval of 7 to 10 days increase 0.2 c. cm. or more per dose up to lysis. In this manner it seems that the relatively small daily liberation of antitoxic immune substance could be better compensated by the physiological blood forces, than under the stress of the tremendous liberation of the 10-fold method.

11. After a somewhat extensive observation of patients treated by the usual orthopedic methods and paralleling these I. K. patients with other patients having similar affections in the same hospital treated as usual, we believe that I. K. has some curative properties

and a gratifying constitutional effect on patients with tuberculous joints, and is undoubtedly worthy of further trial.

12. Our experience suggests that the treatments should be carried over a period of 6 to 9 months, so as to insure, if possible, complete closure of sinuses.

THE ALLIES OF THE HEALTH DEPARTMENT.*

By GEO. B. YOUNG, M. D.

I was asked to say a few words in regard to the allies of the Health Department. The first thing to be noted is the very obviousness of the fact that the Health Department must have allies. It is absolutely impossible for the Health Department to be all-embracing, to fulfill all the various indications that, in a sociological way, arise in a city like Chicago. It is very undesirable that the Health Department should be obliged to attempt this. I think it is undesirable because if we did these things we would have a condition come about in which all industries and all influences of that kind would be officialized, and that, I think, is an exceedingly undesirable state of affairs. As I intend to speak very briefly I will give only one reason why I believe the various agencies should not become officialized, and that is that under such a condition the individual is gradually lost sight of, and the whole situation eventually drifts into a dry-as-dust-routine.

Now, the Health Department naturally has allies of two kinds. The first, of course, embraces the great general public. Everybody engaged in work of any kind in the city should be an ally of the Health Department. In fact, the Health Department is nothing but an instrument of the great public. But the allies of which I want to speak more especially for the moment are those who specialize, those who are prepared to take up some of the particular things which the Health Department cannot do but which have to be done. The only way we can do these things is by real co-operation, and co-operation, as Mrs. Aldis says, is one of the most difficult things to handle. Unfortunately, you cannot co-operate with another man or another woman except as man to man, as woman to woman, or as woman to man, and as no two people are alike, no two points of view are alike, it soon comes about that there may be a little difference of opinion, something that can be taken home and talked about in the family or among the directors of the society until it really becomes a grievance.

The way to avoid this is to know each other very well and to get into the habit of assisting each other. Then the differences of opinion won't be of so much force.

The Health Department cannot get along without these allies.

*Presented at the annual meetin of the Visiting Nurse Association, January 10, 1912.

It absolutely must have them. The Health Department wants to bring about a state of affairs in which these alliances will not be a sporadic affair, but a constant, everyday affair. I do not know how this is going to be done, but something of that kind should be done. Last season we co-operated with the Visiting Nurses and the Infant Welfare Society, in the summer work. We want to begin this work very much sooner this year. We want to start the nucleus of an organization, a sort of federation, as it were; something that will bear the same relation to the various agencies doing this kind of work that the United Charities bear to individual charitable effort. I take this opportunity to mention this to you because I have had it in my mind for some time and this is the first opportunity I have had to present the idea. And I present it first to this organization because it is the pioneer organization of its kind in the city. I wish to express a hope that a way may be found by which this alliance, which is so absolutely necessary, which heretofore has only been temporary or occasional, can be made permanent. Not that this work should become a part of the Health Department. The Health Department has its own duties to perform, those of prevention, and correction if necessary, but the care of things which arise from measures for correction not being perfected does not belong in the Health Department.

I want this idea to get into the minds of all present—the idea of bringing about some organization, an organization of organizations, not necessarily centering around the Health Department, although that is logically the center, but something by which these various agencies can get together. I trust that some way may be perfected by which these allies may cease to be merely nominal allies, so that each, thoroughly understanding the scope of its own work, will yet be ready to broaden the confines of its activities into immediate juxtaposition to the activities next to it and, if the occasion should arise that the activities slightly overlap, will not go home and complain.

The Health Department wants it understood that it would be absolutely unable to meet the indications in the city of Chicago unless it could absolutely rely upon the assistance of organizations such as the Visiting Nurse Association.

BOVININE IN VARICOSE ULCERS.

By J. S. PEREKHAN, M. D., CHICAGO.

The slow healing of varicose ulcers of the legs, is well known. I feel that any suggestion which might help hasten the healing process in these cases is acceptable, hence these few remarks.

For over ten years, I have been treating varicose ulceration with a wet dressing of "Bovinine." I am sure they can be healed in one-half the time possible by any other treatment with ointments, powders or liquids.

The patient is put to bed if possible—although in mild cases the patient can be spared the time and expense of the bed treatment. The skin around the ulcer is greased with zinc ointment or sterile vaseline, the ulcer covered with half a dozen layers of sterile gauze and soaked with Bovinine and then covered with oil silk. This dressing is changed once every two days, but always kept wet. It may be necessary to omit the wet dressing every few days, for a few days or so, and the ulcer dusted with compound stearate of zinc powder in order to avoid the maceration of the surrounding skin.

I do not attribute any antiseptic virtue to the Bovinine, but there is no denying the fact, that the granulations become healthier and the circulation better, and consequently the skin around the ulcer less inflamed and oedematous.

In one case especially, I was convinced that Bovinine did improve the local capillary and lymphatic circulation and hastened epidermization. This patient, 65 years of age, was referred to me by Dr. D———. For over two years he had suffered from chronic ulcers. The several physicians who treated him, told him the ulcers were due to hardening of the arteries of old age. No specific or diabetic history. He had an ulcer on the upper and outer surface of the left thigh as large as a hand, another smaller one on the inner surface of the right elbow, and another over the deltoid muscle.

These ulcers were treated with a wet dressing of Bovinine and all healed up in the course of a few weeks and remained so. Patient never got tired speaking of this wonderful cure.

I believe Bovinine worth trying in these cases.

2600 INDIANA AVENUE.

CARE OF THE SICK POOR IN JAPAN.

By W. W. PETER, M. D.

Our stay so far in Japan has been most pleasant, due to the good weather we are having and to the many friends who make possible a utilization of time not afforded the average tourist. Through their kindness, too, we are enabled to come into personal touch with Japanese not interested in how much money they can extract from you (a feat ordinarily almost impossible). In this way we can assimilate not only what we see for ourselves, but what is more important, we also get the viewpoint of the foreign residents and the Japanese themselves.

Japan has many problems. Some of them are the result of the many rapid changes through which the nation has passed within the last fifty years. One of these problems, and a growing one, is the problem of the poor.

Only 12 per cent of the area of Japan is arable. This was sufficient 50 years ago. The population was smaller and the stupendous national debt now resting heavily upon the people was then unheard of. Taxes have increased more rapidly in Japan within the last five years than in any other nation. The price of rice has increased 30 per cent within the last four years, and rice is one of the national staples. Many people today cannot afford rice. They live on sweet potatoes and fish. This increase of population, along with the increase in taxes, has caused a great deal of suffering, particularly in the centers of population and in the cities.

From a medical standpoint the poor have never received much attention. First, because of their religious customs, and again, because the spirit of charity, so marked in Europe and America, has not yet taken sufficiently deep root to affect the very poor.

Yesterday I visited one of the Buddhist temples where women are in the custom of worshiping. Of the ten women who did obeisance to the gods while I was there, six walked up to a horrible figure in bronze representing a man in the sitting posture. Him they stroked in various parts, after which they stroked their own bodies in the same way. Most of the women had rheumatism, I take it, for they stroked the knees and ankles of this healing god with especial vigor and then transposed his healing qualities to their own knees and ankles. (I was told by the priest that one to two hundred women came there each day, climbing the three miles up the mountain to this temple, and that most of these women were laborers in the

wet rice fields.) Likewise, in all parts of Japan the very poor often seek recourse of the gods for their bodily ills. While this religious practice is slowly being given up, the poor people themselves have not created very much of a demand for charity beds and dispensaries.

And in the past the spirit of charity toward the sick poor was not marked. As individuals, the Japanese appear very neighborly, and without doubt care for their sick friends as best they can. But the state itself has never taken official cognizance of the need for hospitals where the poor could go freely. Only recently has such a plan received official endorsement.

In the early part of this year, H. I. M., the Emperor, gave an unconditional gift of Y 15,000,000 (\$7,500,000) as the foundation of what is now being called the imperial relief fund. Led by the prime minister it is planned to make this a national fund to reach the sum of \$15,000,000. The purpose of the fund is three-fold, and embraces the needs of the sick poor of the entire empire. There is to be a hospital with a free public dispensary in each of the few very large cities. Each of the smaller provincial capitals is to have a free dispensary and later, if the fund allows, a hospital also, while the poor in the country districts are to have ready access to physicians and to receive medicines without cost or at cost, as the case may demand.

It is hoped by the leaders of this movement that the problem will not be as difficult as it looks at first glance. Japan has a rigidly enforced income tax on all incomes above \$175 a year. And to deal with the great number whose income is too small to be affected by this tax, it is said the government machinery will be sufficient. To weed out the unworthy applicants, each case will be investigated. Accurate records will be kept, and actual punishment meted out to any who wilfully misrepresent facts in order to receive the benefits of this fund.

In spite of the fact that this Utopian scheme is to benefit the whole nation, considerable difficulty is being encountered in the raising of the full amount. The people, rich and poor, are taxed almost as much as they can stand. In some quarters it has seemed necessary to bring official pressure to bear upon government employes and business men in order to secure subscriptions.

While the Imperial Relief Fund is the largest movement along medical lines on foot in this empire, the city of Tokyo affords two instances worthy of note, where individuals of means are doing much

for the sick poor. This capital city of 2,300,000 people has 200 hospitals ranging from ten beds upward. But apart from those conducted by medical missionaries there are only two large hospitals where the poor can go. The largest is the City Charity Hospital of 170 beds, supported almost entirely by Baron Takagi. The other is the Mitsui Charity Hospital, supported entirely by the Mitsui family. Five years ago the Mitsui family gave \$600,000 as an endowment fund. Two years ago the present building was opened. Built along modern lines adapted to Japanese customs, the structure cost \$100,000 and the equipment \$40,000. It is but two stories in height (earthquakes are frequent in Tokyo), with numerous short wings running out from the one main corridor. There are fifty beds for surgical patients, fifty for medical, and twenty for throat, nose and ear. The large number of eye patients are included in the medical list, but most of them are only out-patients. An entire set of wings is given over to dispensaries where last year an average of 600 patients were treated daily. There are seventy-five student nurses and ten with government registration to their credit, all of them Japanese. The staff consists of fifty Japanese doctors who receive little or no remuneration. The budget of yearly expenses is \$37,500. Being a family enterprise, there is no yearly report published. (My informant was Mr. E. Funso, the financial manager.)

In many respects the hospital resembles one of similar size in America. For their mental effect, perhaps, a more liberal use is made of odoriferous drugs in the dispensaries. But on the whole the equipment is modern as far as instruments and beds are concerned. "Since ninety-five per cent of Japanese doctors take post-graduate work in Germany after they finish their courses in the Imperial University, our methods of treatment are as modern as we can make them," said Mr. Funso.

The only shock one gets is the operating room. At the entrance are a dozen or more little slippers. Inside are the nurses in bare feet, with sleeves rolled up (no gowns) and with wee caps surmounting their black hair. Two corners are taken up by coal stoves (elsewhere the building is chilly and heated by charcoal burners). The floors are of cement with little pools of water and an occasional cigarette stub awaiting final attention. The doctors have no small opinion of their own ability and proceed with the grace and fearlessness of veterans.

Passing through the wards one's back gets tired, for every patient able to do so makes a little bow. Often it is only a weak nod

of the head, accompanied by a stifled groan. And under such circumstances one can do no less than bow heavily in return. Nearly all the charts have some German words on them, and the name of the disease is almost invariably in the German.

During the Russo-Japanese war the medical profession of Japan "found" itself. Wonderful strides have been made since that time. With the growth of the Imperial Relief Fund and the working out of this splendid plan and with the increase of charity hospitals supported by individuals, the poor in Japan may expect to receive much of medical attention denied to them in the past. The growth of this spirit of charity toward the poor is but one of the many wonderful changes taking place in this island empire.

November 8, 1911.

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Editorial.

A PHASE OF EDUCATION IN CRIME.

Medical men and others interested in the psychology of crime understand that crimes are often imitated. One sensational murder is followed by another similar in character. A society woman elopes with the coachman and another soon follows. One suicide jumps from some high place, another will imitate his example. One young lady disappears, another is liable to follow. Thieving and hold ups are so common they seem to be contagious. Human beings are followers of fashion in habits and crime as they are in the clothes that they wear.

From this standpoint the newspaper publication of all kinds of misconduct is open to censure. The claim put forward by the press that the public demands sensational news and it is their duty to furnish it is not based upon sound reasoning. The publication of the

details of crime or indecency whets the appetite of the imitator and may be fairly considered an inciting cause of crime and indecency.

A recent opera is based upon a scene wherein a woman becomes infatuated with a man who is a leader of the denizens of a Neapolitan under world, yet becomes so intoxicated with the possession of jewels placed at her command by another that she is robbed of her chastity by the latter for whom she had no real affection. The opera is sung in a foreign tongue and the average Chicago listener might view the scene without knowing all, except for the extravagant and undue posturing as the curtain falls upon the second act and the statement in English in the story of the opera printed in the program which leaves no room for doubt as to the author's meaning. The last act is a scene in a den of iniquity and exhibits as a feature a dance which consists chiefly of a rather startling sidewise wiggle of the pelvis that calls too much attention to that part of the human anatomy. The play has been heralded as a great honor to Chicago for here it is produced for the first time in America, and the composer under whose direction it is given was called before the curtain again and again by the applause of an appreciative and approving audience which consisted largely of Chicago's most refined and aristocratic citizenship. In the Auditorium theatre this lecherous picture is called art. The same picture a few blocks distant is called vice. Some of our good citizens are making heroic and successful efforts to put down vice in this city, other good citizens are unwittingly creating it by grand opera if the theory of imitation is as strong a factor as we think it is. Feminine frailty and feminine depravity is not the proper mirror to hold before the young, and those of mature years can get along without it.

By way of contrast another play has come to us that is a story of the everyday life of the home-loving Scotch. It is patronized well by the opera-going people and is a charming entertainment enjoyed by all. The lessons it teaches are forceful and needful, it is clean throughout, and there is no sensation or wonderful climax in it. One leaves the place feeling better and stronger.

We wish to make the point that the people do not want sensations. They do not want wonderful climaxes. They do not want extravagant situations, great heroes or heavy villains. The press and the stage when feeding the public on such things are depraving the natural taste and creating something that is harmful. Successful plays and successful literature are pictures of real life, of home-spun life very frequently. We venture another illustration of the "hamely

Scot" for those who recall the tremendous success of the book "Beside the Bonnie Briar Bush." The world is interested in such characters as William MacClure and Margaret Howe. They are the builders of character that form the backbone of nations. They are needed and loved. There is nothing good to be gained by telling of the ways and of the doings of the human dregs that form the under world. We need no scenes from Italian dives or of Neapolitan nastiness.

CHILDREN'S TEETH.

Miss Theora Carter of Seattle, Wash., has donated \$5,000 for the work of correcting and straightening teeth of Chicago children who are too poor to pay for that important service. The Esther Falkenstein settlement house, 1912 Humboldt boulevard, has taken up the work and has made a good start already.

Next to keeping the teeth well cleaned and the early decay checked and repaired, the straightening of teeth is most important. It is not the teeth of the poor alone that are neglected, but the teeth of all children are more or less neglected. Added to the dental work that is now being done in the public schools this new move will do great good. Every child should have his teeth examined at frequent intervals and should be given the benefit of modern dentistry. It is to be hoped that the excellent charity of Miss Carter will not be overlooked by others who have the means and the inclination to help their fellow beings.

HOSPITAL ASSOCIATION.

The American Hospital Association will hold its next annual meeting in Detroit, November 24th to 27th, 1912.

Hospitals have become so necessary that there are few towns of 10,000 inhabitants or more in the country without one. It is one thing to erect and equip a hospital and it is another thing to make it serve its greatest usefulness to its community and at the same time be as nearly self-sustaining as possible. The best methods of handling the details of hospital management can only be had by frequent discussion and exchange of views of hospital people.

Many hospitals are not serving their purpose. Hospitals are not necessarily institutions where surgical operations are performed, but places where any sick, injured, or convalescent person may find the highest type of advice. There should be hospitals where those

who are simply tired or weary may go and sojourn until they feel braced up and can start again. There are institutions more or less outside the fold that should be brought in,—“jag cures” and “dope cures.” These are properly hospitals and should have the highest type of medical attention. There is a demand for them and medicine must meet that demand, else empiricism will step into the opening and ultimate harm be done.

The hospital field is a large one and we have no doubt the next meeting of the association will be most successful.

Medico-Legal.

“PROFESSOR SMITH, HEALER”—“WALK IN.”

A sign reading as the above hung over the door of the “Healer’s” office in Denver, Colo. He claimed his treatment was a natural one—a gift from the Almighty; said he could cure any disease medical men could and many they could not. He belonged to the church of “The Divine Scientific Healing Mission”; preached the gospel and healed the sick without the use of drugs or a knife; some he charged, some he did not; never turned any one away. He could not tell whether patients had gout, measles, or rheumatism, but he could cure them—all he had to do was to lay his hands upon them. When indicted for “practicing medicine without a license,” he claimed to come within the exemption of the statute providing that the practice of the religious tenets or general beliefs of any church whatsoever, not prescribing or administering drugs, should not be prohibited. The Supreme Court of Colorado, in *Smith v. People*, 117 Pacific Reporter, 612, in denying the “Healer’s” claim of exemption, holds that the statute did not authorize one, under cover of religion or religious exercise, to go into healing commercially for hire, using prayer as the curative agency or treatment, and that such a practice was the practice of medicine within the plain meaning of the statute defining the “practice of medicine.”

PHYSICIAN’S INSURANCE.

A comparatively new question, as to which the law is not yet settled, was under consideration in *Physicians’ Defense Co. v. Cooper*, 188 Fed. 832. The Physicians’ Defense Company is a corporation which, in consideration of a stipulated payment, agrees to defend at

its own expense any action brought against the contracting physician, provided the expense does not exceed five thousand dollars, but not to pay the resulting judgment, if any. It was held that this was a contract of insurance, and that the company was amenable to the statutes of California relating to the business of insurance. This was said with special reference to the definition of insurance given by the statute, as a contract whereby one undertakes to indemnify against loss or liability arising from an unknown or contingent event. The Minnesota Supreme Court took the same view under a similar statute (*Physicians' Defense Co. v. O'Brien*, 100 Minn. 490), while the Supreme Court of Ohio has construed such an agreement as nothing more than a contract to render personal services (*State v. Laylin*, 73 Oh. St. 90). The Appellate Court of Illinois has taken the same view. See *Vredenburg v. Physicians' Defense Co.*, 126 Ill. App. 509.

In the latter case Mr. Justice Freeman, who delivered the opinion of the court, was not hampered by any statutory definition of insurance, but considered only the definitions of the essential nature of a contract of insurance found in the books. He said: "The contract in controversy does not fall within the foregoing definitions. By it appellee undertakes at its own cost and expense to defend the other party to the agreement against suits of a specified character, brought within a specified time, in consideration of a fixed payment which may be deemed in the nature of a retainer, such as an attorney may receive from a client. The company does not undertake to indemnify the holder of its agreement against a judgment, or to pay such judgment nor any part of it, not even the costs of suit. It is true that in making defense it may have to pay out more than the sum it receives. So also an attorney who may agree with a client to defend a suit for an agreed compensation, may find himself compelled to expend time and labor worth more than he has agreed to charge and receive. The contract has no element, so far as we can discover of indemnity."

The reasoning of the federal court in the first case cited, to the contrary, is not without persuasive force. "Complainant argues that such extra legal costs and expenses, if any are incurred, are not the liability or loss of the contract holder, for he does not incur them; that the liability incurred in this regard, if any, is that of the complainant and not the physician. This is begging the question. The obligation rests upon the complainant, it is true, but only by reason of its contract by which it assumed it; the primary liability

to such costs and expenses is incurred by and rests upon the defendant physician, and but for his contract he would be called upon to pay them. * * * The real nature of the contract is to be determined, not so much by regarding its form as its effect, and for this purpose its terms may be transposed and its stipulations so stated as to show what is really accomplished." And so transposing them, the court creates a contract, not to undertake the defense of the suit, but to repay to the physician the costs incurred by him in defending at his own expense and through his own agents and attorneys, and concludes that such a contract would plainly be one of indemnity.

It must be confessed that the line between a contract of insurance, as that word is ordinarily understood, and the contract under consideration in these cases, is rather vague. So far as the physician is concerned, the contract confers upon him all the benefits of a straight policy of insurance against the payment of attorney's fees, court costs, etc. So far as the company is concerned, it undertakes, in consideration of a fixed payment, in the nature of a premium, as underwriters would term it, to bear all the expense, up to a certain limit, to which the physician may be exposed in defending malpractice suits. If the agreement were, as the federal court suggests, not to defend the suit, but to pay whatever the physician might have to expend in defending it, the analogy would seem still closer,—most difficult to distinguish from the ordinary indemnity policy against claims for damages due to the negligence of the insured or his servants. But if the contract be so classified, there would seem to be no end to the number of contracts, entered into in the ordinary course of business, which would also have to be classed as contracts of insurance, involving, as a corollary, the compliance by the active party to such contracts,—the person who must respond, in services, in money or otherwise, in a given contingency,—with the insurance laws, including incorporation.

Naturally, the contract which first suggests itself, as most nearly approximating the contract of the Physicians' Defense Company, is a contract by an attorney to attend to all his client's business for a given period, in consideration of a stipulated fee. Such contracts are made every day in the year, yet no one has ever suggested that they are contracts of insurance. Strictly stated, they are contracts to do an unknown amount of work for a fixed compensation. It is true that ordinarily such contracts are entered into by the attorney with an eye to the amount of work which he is likely to be called

upon to do, compensation and not speculation, being his guide in fixing the fee, while in the contracts of the Physicians' Defense Company, it is manifest, from the disproportion between the fee, or premium, charged, that the undertaking is of a speculative nature, the payment being fifty dollars per annum, and the possible liability five thousand dollars. If one in ten of the company's patrons should have a suit for malpractice to defend in any one year, it is highly probable that it would have to pass a dividend or levy an assessment. But the difference between its contracts and the contract of the lawyer who accepts an annual fee for attending to his client's business, is, after all, but one of degree.

In the same class is the contract, formerly much in vogue, under which a physician undertook, for an annual fee, to attend to a family, without regard to the amount of sickness or the calls which he might be required to make. So, without seeking out specific instances, it is evident that there are innumerable contracts made from day to day, in which the amount of service to be rendered for a fixed sum, varies, in accordance with facts not capable of prediction at the time the contract is made, and which, therefore, involve a certain element of speculation.

It would seem, therefore, that the definition of the California statute, as interpreted by the federal court, is so broad as to embrace contracts which the legislature could hardly have intended to classify as insurance contracts, and that the definition, or the construction, rather, is erroneous. Yet it would probably be difficult to draw a definition of insurance which would exclude such agreement, unless by a specific exception. Perhaps the fact that in the one case the personal skill of the "insurer" or its agents constitutes one of the considerations for the "insured" entering into the agreement, and that the ultimate result to him would be serious or otherwise in accordance with that skill, might be seized upon as a distinguishing factor.

Book Reviews.

CRIMINAL MAN. According to the Classification of Cesare Lombroso. Briefly Summarized by His Daughter Gina Lombroso Ferrero with an Introduction by Cesare Lombroso. Illustrated. New York: G. P. Putnam's Sons. 1911. Price, \$2.00 net.

Every physician and publicist will be glad to have in this convenient English form a brief pithy but comprehensive resume of Lom-

broso's *Criminal Man*. The book also contains an appendix in which all the other works of Lombroso are outlined in an intelligent digest.

The tendency to refer everything criminal to degeneracy and atavism which usually is attributed to Lombroso in an exaggerated degree will be enlightened by a perusal of this book. For instance, on page 49 one reads: "Just as a musical theme is the result of a sum of notes, and not of any single note, the criminal type results from the aggregate of these anomalies, which render him strange and terrible, not only to the scientific observer, but to ordinary persons who are capable of an impartial judgment." After all, the impression derived from an acquaintance with the original publications of Lombroso and re-enforced by reading this compilation is that he has pushed special pleading and has made many facts conform with preconceptions, the natural tendency of an enthusiast.

In order to give a view of the scope of the work the following list of chapter headings is submitted: *The Born Criminal, The Born Criminal and His Relation to Moral Insanity and Epilepsy, The Insane Criminal, Criminaloids, Origin and Causes of Crime, The Prevention of Crime, Methods for the Cure and Repression of Crime, Examination of Criminals, Summary of Chief Forms of Criminality.*

All interested in sociological questions who do not read these works in Italian or French, should welcome this book.

THE DOLLAR HEN. By Milo M. Hastings, Formerly Poultryman at Kansas Experiment Station; Later in Charge of the Commercial Poultry Investigation of the United States Department of Agriculture. The A. I. Root Company, Medina, Ohio. Price, \$1.00, postpaid.

Attention is called to this little volume because it is that rare thing, a poultry book that is not a special plea for the claim of extravagant profits to be obtained from a chicken farm, but a plain business-like effort to place poultry keeping on a sound scientific and economic basis. "The Dollar Hen," is not a theoretical treatise on fancy breeds, impractical methods, poultry shows, etc., but an attempt to make the cost of growing and marketing poultry amount to less than the receipts from its sale. We recommend this book to all who are interested in poultry raising and wish to know more of the practical side than is usually presented.

THE MECHANICAL FACTORS OF DIGESTION. By Walter B. Cannon, A. M.. George Higginson, Professor of Physiology, Harvard

University. Illustrated. New York: Longmans, Green & Co., 1911. Price, \$3.00 net.

This volume represents the author's extensive researches on the subject of the motor activities of the alimentary canal, together with a resume of investigations that have been made along this line by other observers. It presents, therefore, the latest discoveries concerning the mechanical factors that enter into the process of digestion and should prove of great interest and value to the general practitioner as well as to the specialist in digestive diseases. Activities of the digestive tube in surgical conditions, auscultation of rhythmic sounds produced during digestion, the influence of emotional states, and the relation of tonus to peristalsis, are among the subjects discussed.

FIFTY YEARS AMONG THE BEES. By Dr. C. C. Miller. Published by the A. I. Root Company, Medina, Ohio, 1911. Price, \$1.00 postpaid.

The title of this book suggests the long experience of the author in practical beekeeping. To those who have this fascinating outdoor occupation for a hobby, it will be interesting to have the practical instruction and advice of a veteran. To that far larger number who must be content with the enjoyment of such pleasures as "they flash upon that inward eye which is the bliss of solitude," we would suggest that many a fascinating picture can be conjured up by reading this account of the wonderful bees, their highly developed community life, buying an Italian queen for \$10, placing of colonies, care of hives, clipping the queen, feeding to fill combs, workers, drones, swarming, etc., etc.

PRACTICAL ELECTRO-THERAPEUTICS AND X-RAY THERAPY. With Chapters on Phototherapy, X-Ray in Eye Surgery, X-Ray in Dentistry, and Medico-Legal Aspect of the X-Ray. By J. M. Martin, M. D., Professor of Electro-Therapeutics and X-Ray Methods in the Medical Department of Baylor University, in the Medical Department of Southwestern University, and in the State Dental College, Dallas, Tex.; Member of the Texas State Medical Association, American Medical Association, American Röntgen X-Ray Society, etc. Containing 219 Illustrations. St. Louis: C. V. Mosby Company, 1912. Price, \$4.00.

This book is intended for the student and general practitioner who may wish to gain an intelligent understanding of the therapeutic uses of electricity. It is plainly written, is not too technical,

and presents in a practical way the modern conception of electricity and what it can be made to do. Without attempting to describe the individual machines now on the market the author gives the principal features of the different types, so that a good working knowledge can be obtained from a careful reading of this excellent book.

There are chapters on electrostatics, controlling and measuring apparatus, on the X-Ray and its various applications, methods of applying currents, electrolysis, electric technic for treatment of diseases of the nervous system, high frequency currents, phototherapy, etc. The volume is splendidly illustrated, containing many interesting photographs and skiagraphs from the author's private collection.

PRACTICAL GYNECOLOGY. A Comprehensive Text-Book for Students and Physicians. By E. E. Montgomery, M. D., LL D., Professor of Gynecology Jefferson Medical College; Gynecologist to the Jefferson Medical College and St. Joseph's Hospitals; Consulting Gynecologist to the Philadelphia Lying-In Charity, the Kensington Hospital for Women, etc. Consulting Surgeon to the Jewish Hospital. Fourth Edition. Revised and Rearranged. With Five Hundred and Eighty-Nine Illustrations. Philadelphia: P. Blakiston's Son & Co., 1912. Price, \$6.00 net.

This edition of Montgomery's gynecology, from the press of the Blakiston's, is fully up to the reputation established by former issues. A great deal that has become obsolete in this age of rapid change and advancement has been stricken out, but, fortunately, Montgomery has retained enough of the old structure to show whereupon our present platform is built. A marked feature of this book is what might be termed the constitutional aspect in the consideration of gynecological problems. While the text advocates strenuously radical action in, for example, uterine malignancy, early diagnosis and then prompt and extreme operative procedure—on the other hand, in almost all gynecological conditions there is a carefully considered line of systemic or constitutional treatment, based upon a clear pathological viewpoint and supported by formulae as general guides in combating the condition. The later views upon vaccine and serotherapy are fully considered.

The text is made clear by many illustrations, which are especially helpful where they elucidate the many details of complicated operative procedure. It is certainly one of the most useful books that a gynecologist could have.

PRACTICAL TREATMENT. Volume III. A Handbook of Practical Treatment. In three volumes. By 82 eminent specialists. Edited by John H. Musser, M. D., Professor of Clinical Medicine, University of Pennsylvania; and A. O. J. Kelly, M. D., Late Assistant Professor of Medicine, University of Pennsylvania. Volume III. Octavo of 1095 Pages; Illustrated. Philadelphia and London; W. B. Saunders Company, 1912. Per volume: Cloth, \$6 net; half morocco, \$7.50 net.

This the third volume, completes one of the most valuable series of books written within the last decade. In spite of the great advance made along the line of preventive medicine, it is still the medicine of the future. Today, unfortunately, the practitioner is confronted with the stern fact that he is called upon to combat existing disease in its multitudinous forms and anything that aids him in this is of incalculable benefit. Nothing that we know of will do this as well as this splendid collection of monographs upon practical treatment, edited by Musser and Kelly.

The two earlier volumes have been reviewed in detail in these pages and this concluding one only serves to corroborate the view then expressed. They are really a collection, carefully edited, each in its proper place, of individual essays, all exhaustive and placed together in one complete treatise. The volume under immediate consideration has as contributors the most able men in each particular line that international medicine affords.

To abstract in detail: The section on constitutional diseases has been written by Janeway, Fitcher and Hewlett, with Goldthwait upon the surgical section; the respiratory system, committed to Richardson, Hudson-Makuen, Henry Jackson, Musser, Talley, Chevalier Jackson and Robinson. In diseases of the respiratory system in children one would look for but one name and finds it, Dr. Isaac Abt. The section on diseases of the digestive system has been written by Cryer, Dutton Steele, Sippy, Edwards, Ladd, Stockton, Anders, Sailer and Jopson, while the surgical side is represented by Clark, Moynihan, Roswell Park, Gibbon and the Mayos; the urinary system by Le Fevre and Hunner; the nervous system, Spiller, Frazier, Taylor, Homans, Der-cum and Moffitt; with the concluding sections upon diseases of the mind by Lloyd.

The series has been produced by the publishers in a manner beyond criticism and well worthy of the valuable matter they present.

A COMPEND OF GENITO-URINARY DISEASES AND SYPHILIS. Including Their Surgery and Treatment. By Charles S. Hirsch, M. D., Formerly Assistant in the Genito-Urinary Surgical Department, Jefferson Medical College Hospital; Consulting Physician, Social Service Hospital and Juvenile Protective Association, Philadelphia. Second edition; with 74 illustration. Philadelphia: P. Blakiston's Son & Co., 1912. Price \$1.25 net.

These quiz compends serve a useful purpose in presenting different subjects in as complete a manner as possible, yet briefly and in such a way as to facilitate the mastering of important points in diagnosis and treatment. Much new material has been added to this edition and the work has been brought thoroughly up to date. Recent investigations in the diagnosis and treatment of syphilis are given special attention, with chapters on the serum diagnosis of syphilis, the principles and technic of the Wassermann and Noguchi tests, the salvarsan treatment, etc. Lists are also given of selected formulæ, of genito-urinary instruments required for office use, and a final quiz of one hundred questions covering the main features of the subject.

News Items

For Rent.—We have now desirable space or hours in physicians' new suite. Moderate rent. Telephone Central 5745.

German Nurses' Hours.—At the recent congress of the German Women's Progressive Union in Berlin an evening was devoted to the question of "Women as Wage-earners." Nurses were represented by Sister Charlotte von Cammerer, who alluded to the 75,000 women engaged in nursing in Germany, with an average working day of 11 to 13½, occasionally to 18½ hours, the hours for meals not being always undisturbed. These are nurses in public hospitals, but those in private nursing homes have even longer hours (13 to 15 hours), with no fixed times for meals and recreation. In some cases nurses have been on duty 30 to 40 hours. In the Potsdam district a working day of 10 hours has been enforced by the authorities, but an eight hours' day is still considered impossible.

In Prussia, Herr v. d. Schulenberg, minister of state, has issued an order whereby all hospitals under government authority in Potsdam are to introduce a maximum working day of 10 to 10½ hours for their female nurses, to be arranged by doctors and the heads of institutions. Sufficient intervals for meals, especially for dinner, are to be deducted, but Sunday hours of work are not to be greatly shortened, nor is a day off during the week permitted. A yearly holiday of "suitable" length is ensured, but the length is not stated. Nurses are not to be

required to do heavy work suitable for servants, such as cleaning stair-cases and corridors, and they are to be provided with a sitting-room in which to meet after work.

In the recent congress of German nurses held at the International Hygienic Exhibition in Dresden, Sister von Cammerer also spoke and, strongly urged nurses to join in the movement for women franchise as the best means of raising their status and obtaining desirable reforms in the conditions of their work.—Nursing Times, London, England.

The New York State Civil Service Commission announces an examination to be held on February 24, 1912, for the position of Junior Physician (Homeopathic or Regular), in the New York State Hospitals for the Insane, at a salary of \$900 and maintenance, increasing \$100 each year to a maximum of \$1,200 and maintenance, beyond which point advancement is made upon promotion examinations. As the commission has experienced difficulty in securing a sufficient number of eligibles from among the residents of New York state, it has been decided to admit residents of other states, and in order to secure added competition, the commission is endeavoring to make arrangements for holding this examination in Boston, Philadelphia, Washington, Cincinnati, Chicago, St. Louis and St. Paul.

The New York state hospital service comprises fifteen state hospitals, the Psychiatric Institute, and two hospitals for the criminal insane under the superintendent of prisons. Over 30,000 patients are treated annually, and the service presents the best available opportunity for the study of insanity. The institutions are organized along hospital lines, with training schools for nurses, and hospital equipment including laboratories, examination and treatment rooms and surgical operating rooms. There are nearly 200 salaried medical positions in the state hospital service, and comfortable quarters, board and laundry are provided for all appointees and for the families of superintendents and first assistant physicians, in addition to the stated salaries. To those who take up the work as a career and apply themselves earnestly, promotion is certain and as rapid as is consistent with the period required for good training and maturity of judgment. The salaries of the higher positions are as follows: Assistant physician, \$1,200 to \$1,500; second assistant, \$1,500 to \$2,000; first assistant, \$2,000 to \$2,500; superintendent, \$3,500 to \$4,500.

Anyone interested in this examination should write at once to the "New York State Civil Service Commission," Albany, N. Y., for application blank and full information."

Special Number of the Interstate Medical Journal.—In harmony with the policy of publishing "Symposium Numbers," at intervals, on timely subjects, the editors of the "Interstate Medical Journal" have outlined a number on "Diseases of the Digestive Tract" for March, 1912.

The "Symposium Numbers" of the "Interstate" (e. g. "Special Syphilis Number," January, 1911, and "Special Heart Number," June, 1911,) are notable contributions to medical literature which command

the attention of progressive physicians wherever the English language is read.

Original Articles: Points in the Diagnosis and Non-Surgical Treatment of Duodenal Ulcer, George Herschell, M. D., London; Protoscopy and Sigmoidoscopy, Prof. H. Strauss, Berlin; The X-Ray in the Diagnosis of Gastro-Intestinal Diseases, Ludwig Kast, M. D., New York; Diagnostic Value of the Test for Occult Blood in the Stomach Contents and Feces, H. W. Soper, M. D., St. Louis; The Diagnosis of Cancer of the Stomach, J. W. Weinstein, M. D., New York; Splanchnoptosis—Enteroptosis, John C. Hemmeter, M. D., Baltimore; Some General Remarks on the Treatment of Gastric Diseases, Jacob Kaufman, M. D., New York; Intestinal Parasites, C. C. Bass, M. D., New Orleans; Duodenal Alimentation, Wm. Gerry Morgan, M. D., Washington.

Collective Abstracts (Critical Editorial Reviews of Recent Literature in Collective Form): Enteroptosis and the Enteroptotic Habitus, Jesse S. Meyer, M. D., of the editorial staff; Most Recent Therapy of Constipation, William Engelbach, M. D., of the editorial staff; The X-Ray in Intestinal Diagnosis, E. H. Skinner, M. D., of the editorial staff; Gastric Neuroses, Sidney I. Schwab, M. D., of the editorial staff; Recent Surgery of Stomach and Intestines, M. B. Clopton, M. D., of the editorial staff.

Diseases of the digestive tract are always of special interest to the physician, since probably more than half of his practice is confined to gastro-intestinal disturbances, and just now of timely interest, because of recent advances in methods of diagnosis and treatment of these diseases.

Insomnia.—The best thing in the latest discoveries about insomnia is that it is not so harmful as it is generally thought to be. "The fact that we confound rest and sleep makes us regard wakefulness as an evil," says Mr. Bolton Hall. Whereas natural wakefulness means that we do not need sleep at the time. Sleep as a natural need varies in all degrees in different persons, and in the same person at different times. Drowsiness means that we ought to sleep, as hunger means that we ought to eat; and natural wakefulness means we ought not to sleep. The eminent German scientist, Helmholtz, the discoverer of the electron, but a physiologist first and last, predicted that with the great improvement in artificial light men would come to two hours of sleep. It has been proved that in electrically lighted fields growth is forced without exhaustion of, or injury to, the vegetation. Let insomniacs cease to fret, credit themselves with so much rest to the good, and rest content with Helmholtz's assurance that two hours' sleep will be the normal man's normal allowance by-and-by.

Resources of Whole Country Needed.—At last a responsible statesman has said it—one, too, who is, at the time he utters the epoch-making pronouncement, the leading spirit of the government of which he is a member, the most successful legislator with two great acts to his credit, the most prominent personality of his country, of

Europe, of his time, David Lloyd-George, British chancellor of the exchequer. At Cardiff, on his native heath, at a non-sectarian religious conference, the other day, Lloyd-George declared that it was as deep a stain on the national flag that it should wave over slum-children and "ill-paid, ill-fed, and ill-housed" men and women as for it to wave over a defeat on the battlefield. The problem, he went on to say, is too large for charity; it would be just as hopeful to try to run the army and navy on voluntary subscriptions. Only the resources of the whole country are adequate, in the view of the author of the budget on the rejection of which the House of Lords forfeited its legislative veto, to drain the morass of social wretchedness and convert it into a fertile plain. It was in the spirit of this surely historic utterance that Mr. Lloyd-George argued, three or four years ago, in proposing his old-age pension, that the old and broken soldiers of industry and peace were as much entitled to pensions from a grateful country as the veterans of the army and navy.

More Men Than Women Die.—More males than females; more married people than single, more infants than adults died during the year 1910, according to the death statistics gathered by the Census Bureau in its registration area containing a little more than half the continental population of the United States. Of the 805,412 deaths registered for 1910—365,674 were single, 276,604 married, 149,846 widowed, 4,380 divorced and 8,818 "of unknown or unstated conjugal conditions." Among the single are included children below the age of marriage. The total number of males was 439,757, and 365,335 females. The maximum death rate was reached in March and the minimum in June. Tuberculosis in different forms claimed 86,309 persons, or 4,474 more than in 1909. This increase was said to be due to the increased area now covered by the Census Bureau, since the death rate per 100,000 population for 1910 was slightly less than that of the previous year.

Tuberculosis In Alaska.—Tuberculosis has its grip on nearly fifty per cent of the population of Alaska, according to the results of an investigation conducted for the bureau of education by Dr. M. H. Foster, Passed Assistant Surgeon of the Public Health and Marine Hospital. In his report Dr. Foster declares that unless the ravages of the disease are checked by timely medical relief the white people as well as the natives of the territory will ultimately be obliterated. According to Dr. Foster's estimates thirty per cent of the present population of Southeastern Alaska have suffered at some time from the tuberculosis trouble. Eye diseases are also prevalent in a number of places and Dr. Foster's recommendations include the establishment of a home for the destitute blind. Armed with these facts the bureau of education has renewed its efforts to secure the passage of a bill pending in Congress appropriating \$70,000 for the establishment of a sanitarium and additional hospitals and nurses.

The Origin and Destiny of the Everglades.—The state geologist of Florida states that the Peninsula of Florida was formed by a submarine

uplift, as evidenced by the underlying rock, which is of Vicksburg limestone formation.

Most of the lakes were formed by solution, the rains having dissolved the limestone, thus leaving depressions. South of Lake Okeechobee, the largest of these lakes, is a vast; high, level plain, known as the Everglades, comprising nearly four million acres of the richest lands in the world, that have been known heretofore as a worthless swamp, but which are now being reclaimed by the State of Florida. Lake Okeechobee, having no natural outlet to the ocean, overflows its banks in the rainy season and floods the Everglades. The elevation of the Glades varies from 21 feet south of the lake to 8 feet above sea level at Miami.

When Jefferson Davis was Secretary of War in 1856, a commission of engineers reported that the Everglades could be drained, and the United States Government, therefore, deeded these swamp lands to the State of Florida, under an agreement that the state must drain them. About thirty years ago a contract was let by the state to Mr. Disston of Philadelphia, but the work was never completed. A few years ago, during the administrations of Governors Jennings and Broward, the drainage operations were renewed, and now there is a contract made by the state with the Furst-Clarke Construction Company, of Baltimore, to complete a system of four canals, aggregating 184 miles, 60 feet wide and 10 feet deep, from the lake to the ocean, which engineers say will lower the lake 4 feet and will thus prevent any future overflow. Later a fifth canal has been contracted for to extend from the lake to Lake Worth near Palm Beach. There are nine powerful dredges now at work on these canals, excavating about eight miles of canals per month.

These canals are provided with locks at intervals of about twelve miles to conserve the water during the dry seasons for sub-irrigation. These canals will also provide for transportation for boats or barges, 22 feet wide and about 80 feet long, drawing $3\frac{1}{2}$ feet of water.

Railroads are already projected and will no doubt be built as soon as the canals are completed. One is now well under construction, extending from Maytown to the northeastern part of Lake Okeechobee. The Atlantic, Okeechobee & Gulf Railroad has given a contract for the survey of a road from Tampa to Ft. Lauderdale.

With the great fertility of the soil, the healthfulness of the climate, the almost perpetual sunshine, the cool summers and the paradise-like winters, who can foretell what will be the destiny of this once despised and oft maligned Everglades of Florida?

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MARCH, 1912.

Original Articles.

MILK AS A FOOD FOR INFANTS.*

By ISAAC A. ABT, M. D.

In presenting this paper to the section on city milk supply, it should be said that it is intended to be a brief resume of our knowledge concerning the food stuffs which are in use for the nutrition of infants and a consideration of the various plans of artificial feeding.

In recent years much progress has been made in the study of the chemistry and nutritional value of milk. There has been much discussion over the difficulties encountered by the infant in digesting cow's milk. During the earlier period it was thought that indigestion was caused by proteids. This thought was particularly emphasized by Biedert. It was he who taught that the excess of proteid in cow's milk produced large indigestible curds in the stomach and these were passed through the intestinal tract undigested. He supported this view by the old test tube experiment which showed that the precipitate or curd of cow's milk was a heavy, firm coagulum, while that of breast milk was a fine, flocculent precipitate. Czerny of Breslau attacked this view and attempted to prove by chemical methods and clinical observations that this conception was not tenable. Indeed, Czerny went so far as to say that the proteid of cow's milk could cause no disturbance of digestion. According to him the proteid was absolved of all harm and the fat was first and foremost the foodstuff which made mischief.

Leaving this topic for the moment, it may be pointed out that

*Read before the American Association for Study and Prevention of Infant Mortality at the Annual Meeting in Chicago, November, 1911.

other views were brought forward to explain the difficulties which the infant experienced in the digestion of cow's milk.

With the advent of the bacteriologic era it was attempted to prove that the contamination of milk by bacteria and their products was capable of producing nearly all disorders of digestion. While it has been proved for all time that milk may be the carrier of disease germs, it is not conceded by those who are best informed that milk containing non-pathogenic organisms can be held responsible for the various disturbances of digestion and nutrition which occur so frequently in artificially fed infants. Of all the vast amount of energy and labor which has been expended in the histological study of the mucous membrane of the digestive tube, but meagre results have been the reward. In other words, children who have died of gastro-intestinal disorders and upon whom most painstaking pathological and histological investigation has been made, have usually been interred with the verdict that the pathological findings were insignificant, or out of all proportion to the severity of the clinical symptoms. No one found degenerative processes of sufficient severity to explain the disease or the death of the patient. No one was able to say, even after a most painstaking examination, that functional activity of the digestive glands was insufficient to carry on their normal functions. Thus it is evident that neither disease nor degeneration of the digestive tract nor loss of physiologic function adequately explained the nature of these disorders.

Briefly, it may be stated that various views such as the presence or absence of specific ferments in milk or the fact that the proteid of cow's milk is not specific for infants cannot adequately explain the difficulties of artificial feeding.

This brings us to the point which we were considering a moment ago, and which has received emphasis in recent years by the diligent research and labor of European investigators. Czerny has suggested a new classification for the gastro-intestinal disturbances of infants. The most important division in his estimation refers to "injuries produced by food." He thinks that fat contained in the milk is by far the most toxic ingredient. It is an elementary fact in chemistry that if fat be acted upon by digestive secretions it is split up into fatty acids; these in turn tend to combine with alkalis. If fat be ingested by the infant in excess the resultant fatty acids tend to combine with the alkalis of the body, thus depriving the organism of alkalis which are required to neutralize the acids of the body. Consequently the fluids and tissues are subjected to the toxic

effect of unneutralized acid substances circulating in the fluids of the body, producing a condition which is technically spoken of as "acidosis." The fatty acids which have combined with the alkalies produce soaps and are evacuated as such in the feces.

The foregoing statements must not be construed to mean that fat is not a normal constituent of the infant's food or that if given in proper amounts to healthy infants it is harmful. The fat of breast milk, if not present in excess, given to a normal baby rarely does harm. Similarly, fat in cow's milk given to a normal infant in proper quantity is a source of heat and energy and assists in upbuilding processes of the body.

The sugar contained in milk is important from the standpoint of nutrition. It constitutes the carbohydrate element of the food and is of great value in nutritive processes. If sugar be given in excess or if it be given to an infant already debilitated by disease of the digestive tract, serious disturbances occur. This is perhaps more true of milk sugar than of other sugars.

Finkelstein has described an acute poisoning under the caption of alimentary intoxication. This condition occurs as a rule in infants who have been previously ill and in whom the porosity of the tissues of the intestinal wall has become increased. The damage to the intestinal epithelium has broken down the barrier which separates the intestinal tube from the tissues and organs which lie beyond. Thus sugar and its deleterious by-products manufactured in the processes of digestion are easily carried as toxic substances to the fluids and cells of the entire organism, producing profound constitutional disturbances and symptoms of intoxication—such as disturbances of consciousness, changes in the type of respiration, alimentary glycosuria, fever, collapse, diarrhoea, albuminuria, with urinary casts, loss in weight and leucocytosis.

The salts contained in milk are important from a nutritional standpoint because they supply to the growing organism calcium and phosphorus for bone formation and the mineral content of the circulating fluids. If salt be withdrawn from the diet the infant loses in weight; the temperature is likely to sink to subnormal. If it be given in excess, a febrile reaction occurs. An excess of calcium tends to produce a retention of fluid in the body, sometimes with dropsical manifestations.

Within recent time Finkelstein and his students have pointed out that the whey of cow's milk was capable of producing disturbances of digestion. It is not definitely stated what constituents of the

they do harm, though the inorganic salts are suspected of doing the mischief; it is supposed that the fluid residue of the milk acts by producing irritation of the gastro-intestinal epithelium, causing a reduction in its digestive functions and diminishing the functional activity of the cells.

This, in brief, is a statement of the present status of the physiology of nutrition and the ideas which are prevalent concerning the injuries which may be produced by food. The final solution of the underlying problem has not yet been determined, but nevertheless experimental and clinical research tend to strengthen the view that injuries may be produced by food, and the individual constituents of milk require further analysis and study from this viewpoint.

FEEDING METHODS.

The simple dilution of cow's milk with water was one of the original methods of feeding. It was planned to adapt the food to the infant simply by diluting the strength of the proteid. Sugar was added, usually milk-sugar, in order to increase the carbohydrate content, which was diminished by dilution with water. Many years ago Jacobi advised the addition of cereal decoctions. Oatmeal water, he thought, was indicated when constipation was present, and barley water was most appropriate in case of diarrhoea. The cereal decoction added somewhat to the nutritive character of the mixture. For a long time it was a mooted point whether young infants were capable of digesting starch. It has been determined that children three months and over are capable of carrying on a moderate amount of starch digestion. It cannot be denied that many normal babies were and are still being successfully fed on simple milk dilutions.

Professor Rotch, elaborating methods of Biedert and Meigs, conceived the idea that milk mixtures might be prepared synthetically, with a definite percentage content of fat, sugar proteid and alkalinity, so that from the standpoint of percentage composition the milk might be suited to the child's age and to his power of digestion. Thus, formulæ were constructed and milk prepared which contained a certain definite amount of fat, sugar and proteid. In normal children six months or older milk which contained 4% fat, 7% sugar, 2% proteid, corresponding in percentage composition with human milk, was employed. This plan of feeding still has its enthusiastic advocates. That it has survived is proof sufficient that it has a wide range of usefulness. That it has sometimes failed is evidence that the method is not of universal application, or possibly in some instances that the technique and method of its employment is not fully under-

stood by all who would use it. In this connection it should be emphatically stated that whatever method of artificial feeding has been employed in the past or is in use at the present time will succeed in proportion to the intelligence and experience of the physician who prescribes the food; secondly, upon the fidelity, intelligence, reliability and experience of the nurse or mother who is carrying out instructions. To illustrate still further, a food formula may be adapted to the child, though it may be given too frequently, too hot or too cold, too fast; or it sometimes happens in infants' hospitals and occasionally in homes that the child is literally told to help himself. Or occasionally the infant is shaken or tossed during or after the feeding until the food is regurgitated.

Heubner elaborated the simple dilution method, basing his modification upon the theory that an infant requires a certain definite number of heat units or calories to provide for repair, growth and development. The figures which have been obtained were derived from most painstaking metabolism experiments and calorimetric methods. For purposes of illustration it is sufficient to say that it was determined that an infant needed from 40 to 45 calories for every pound of its weight. Thus, an infant weighing ten pounds should be given an equivalent of 400 to 450 calories of food per day. This can be calculated readily when it is remembered that 1 ounce of milk contains 21 calories, one ounce of cream 64 calories, one ounce of skim milk or buttermilk 10 calories, one ounce of sugar 120 calories, one ounce of flour 100 calories, one ounce of barley to a quart of water 3 calories, one ounce of infant foods, 100 calories. Heubner attempted to supply the caloric needs of the infant by the use of three mixtures. The first consisted of $\frac{1}{3}$ milk, $\frac{2}{3}$ water, with the addition of 8% of sugar, or lactose. Second formula, adapted particularly to children of the second or third month, $\frac{1}{2}$ milk with $\frac{1}{2}$ water and the addition of 10% lactose. The third formula, adapted for children after the third or fourth month, consisted of $\frac{2}{3}$ milk, $\frac{1}{3}$ water and 12% lactose. In connection with this method a word of comment may be suggested by the critical observer who may be led to ask: If the caloric requirements are covered, will the digestive processes be sufficient to consume and transform the excessive quantities of sugar or other food stuffs? In other words, should we reckon with calories without studying the individual baby and its digestion? Nevertheless, it should be emphasized that the caloric estimation of food value is an excellent check for all feeding methods. It protects the normal baby, to a certain degree, against overfeeding as well as underfeeding.

Budin's excellent rule calculates the amount of milk required as that quantity which will be equivalent to $1/10$ of the infant's body weight. Thus, an infant weighing ten pounds should have one pound, or one pint of milk properly diluted in twenty-four hours. Or, by a modification of this rule the infant may receive daily an ounce and a quarter to an ounce and a half of milk for every pound of the body weight.

With the advent of Czerny, it will be remembered, we were taught that the fat of milk was the evil-doer; that overfeeding and too frequent feeding was the usual cause of indigestion. In applying a remedy for excessive fat in the food and overfeeding, Czerny introduced the plan of long-intervals between feedings. Five feedings, as a rule, and occasionally six, is a valuable innovation in infant feeding. It is of practical application and is a measure of great value in prevention as well as treatment. In order to overcome the difficulties produced by fat, Czerny employed skim milk mixtures, buttermilk mixtures, Kellar's Malt Soup and low fat mixtures.

It was also found that not only fat, but also starch, was capable of producing injury. Children who were fed excessively with starch, lost greatly in weight and became extremely pale, and suffered from abdominal distention. In another class of injuries produced by starch, the children gained in weight but eventually the tissues became water-logged, the resistance diminished, and infections of various kinds occurred. Pneumonia, otitis, furunculosis and other infective processes were not infrequent. Or in another variety the muscles became hard and rigid, the trunk and extremities stiff like a board. It is needless to say that in these cases starchy food should be withdrawn entirely and small quantities of breast milk or diluted cow's milk should be employed.

As in all empirical methods, so in infant feeding we find extreme degrees of opinion. Thus, Budin in Paris, Schlessinger in Breslau, and Oppenheimer in Munich have urged the use of undiluted cow's milk. While this plan has not met with popular approbation, nor has it been generally successful, nevertheless we must grant that it has succeeded in some instances, notably under the direction of Budin.

As has been previously stated, Finkelstein sees the harm produced by cow's milk in the whey content. He feels that whey, aided by an excess of sugar, may produce the most alarming symptoms. He cannot strictly agree that fat deserves the place which Czerny assigns it. According to Finkelstein, fat is not the root

of all evil in infant feeding. Meyer, the associate of Finkelstein, has attempted to show by an ingenious experiment the harmfulness of the whey of cow's milk. To the whey of human milk he added the curd of cow's milk without producing indigestion or unfavorable symptoms on the part of the infants; vice versa, to the whey of cow's milk he added the curd of human milk, resulting in the production of indigestion and unfavorable symptoms in almost every infant thus fed.

Finkelstein has attempted to surmount the difficulties caused by whey by preparing his now celebrated "Eiweiss" or "Albumin Milk." Briefly, its method of preparation may be indicated: The curd or junket derived from a quart of milk is finely divided by passing it through a sieve and is thoroughly mixed with a pint of water and a pint of buttermilk. Sugar in the form of maltose in the strength of 1 to 5% is added. This method of feeding is more particularly adapted for infants suffering from indigestion or gastro-intestinal disease. While it is of too recent origin to receive final judgment, nevertheless, if properly employed, we believe it has a definite range of usefulness.

In the brief time which is allotted to this paper it would be impossible to consider in necessary details all the methods which are employed in the preparation of infant foods. Peptonization of milk is not now in popular favor. For purely theoretical reasons Czerny and his students would reject it, because, as they say, the proteids of milk are not the cause of trouble. From the standpoint of practical experience we know that peptonization of milk frequently causes diarrhoea and symptoms of gastro-intestinal irritation. The addition of sodium citrate to milk in the one or two grains to the ounce probably acts by preventing coagulation of milk in the stomach, thus permitting it to pass readily into the small intestine. It is believed that with the addition of sodium citrate digestion does not take place actively in the stomach and consequently gastric digestion is replaced by the more powerful digestion in the small intestine.

As to the use of patent foods, only a word need be said. They possess no advantage over cow's milk. They may be occasionally added, especially those containing malt, as an adjuvant. In these instances they are a substitute for sugar, containing its nutritive value, though in no case has a proprietary food served as a specific in infant feeding or as a substitute for milk.

To sum it all up: 1. In order to feed an infant successfully one must have a definite knowledge as to the status of the infant, his digestive function and his constitutional state.

2. A knowledge of the physiology of food, the injuries produced by food and the tolerance for food is requisite.

3. Overfeeding is as disastrous as underfeeding.

4. An excess of fat or sugar is capable of producing toxic symptoms.

5. Simple milk mixtures, that is, milk diluted with water or cereal decoction, with the addition of 1 to 5% of sugar, will in most cases give satisfactory results.

6. Elaborate and complicated milk formulae are not ordinarily required.

7. The technique of feeding consists of careful preparation and proper administration of the food. These are not the least important elements in successful feeding.

8. In feeding sick infants it is frequently possible to ascertain which element of food in the milk mixture is producing harm, and the proper modification may be made.

9. Some children have an idiosyncrasy against cow's milk, as evidenced by the production of toxic symptoms. In such cases breast milk or a suitable adaptation of cow's milk should be instituted.

10. Every baby, especially every abnormal baby, is a law unto himself, and he should be studied as an individual. No one's dictum or rule or recent discovery is as important as a knowledge of general principles of feeding and the physiology of food and digestion.

11. Prolonged starvation lowers resistance, and predisposes to disease and death.

12. Prolonged and excessive use of laxative drugs does not assist in the digestion or assimilation of food.

13. Scalded or boiled milk sometimes agrees when raw milk causes indigestion and diarrhoea.

14. An infant may be difficult to feed because he is suffering from an inherited disease, an anatomical malformation, a constitutional vice or an infectious disease.

15. Fresh air, intelligent care, good housing conditions, frequent bathing and cleanliness, proper clothing for summer and winter, are powerful adjuvants in all that pertains to normal digestion and the upbuilding processes of infants.

THE RELATION OF THE COMMUNITY TO THE MIDWIFE.

By WALTER H. ALLPORT, M. D.

The lecture read by the President of the Chicago Gynecological Society at Lincoln Center, February 29th, on "The Relation of the Midwife to the Community,"* was illuminating and thoughtful, if not of a tone to flatter our civic *amour propre*. It was also a little pathetic in its appeal to the public in the interest of the man-midwife—with incidental references to the parturient woman. Possibly, it may be contended, the discourse was not meant that way, but we have looked in vain for any word of commendation or encouragement or hope for the midwife as she certainly exists in medical history, as a goodly proportion of her must unfortunately be confessed to exist in this country today, or as we may hope she will come to exist in the future under more intelligent state supervision and instruction.

But the Doctor's discourse has presented only one side and one phase of the ever fresh, yet ever old and bitter, war of extermination between the male accoucheur and the *sage femme-hebamme-wehemutter-midwife*. Just at present the accoucheur seems most in favor in high places, and by virtue of superior education has the ear of the public. But time was when the accoucheur cooled his heels in the antechamber or behind the arras of royalty, waiting expectantly for an announcement that the *sage femme* at the queen's bedside had reached the end of her resources. The eternal feminine is strong even in queens; and even when the life of an heir to a throne has been in the balance the exigency had to be a serious one to warrant calling for male help. Time was, too, when the accoucheur** awaited the summons in vain, and only heard after his return to Paris that the midwife had turned the child by the foot, and herself, unaided, had brought a dauphin into the world.

*The paper strikes a note quite in harmony with the following resolutions recently unanimously adopted by the Section on Midwifery, American Association for the Study of Infant Mortality:

Be it resolved: that it is the sense of this Section:

1. That the teaching of obstetrics in medical schools of the United States is grossly inadequate; that no time should be lost in according to the teaching of obstetrics an importance equal to that given to medicine and surgery.

2. That the study of local mid-wifery conditions is urged as a means of collecting facts with which to direct public opinion toward this important subject.

3. That the extension of outdoor dispensary and hospital obstetric facilities is advocated as one of the most efficient measures for obviating this source of maternal sickness and death and a high rate of infant mortality.

**Charles Guillemeau—the queen called him contemptuously, "cet homme de Paris qui accoucha les femmes."

The midwife of the present day has been so scared by the noise made by her male competitor in his efforts to accomplish her annihilation, or to bring her, at least, to a proper sense of her true and very humble position as a subordinate handmaid of science, that her voice is now seldom heard even in her own defense. But it should not be forgotten that the three earliest scientific text-books on obstetrics ever written were penned in the early 17th century by women for women—even though Ambroise Paré contributed most of the ideas. In England, Jane Sharp wrote “The Compleat Midwife.” In Germany and the Low Countries, Justine Sieggemundin wrote the “Chur-Brandenburgischer Hof-Wehemutter,” and had it illustrated at her own expense with copper-plate etchings which probably inspired the larger and more ambitious, but no better ones, in John Hunter’s “Gravid Uterus.” In France, that fat, delicious old midwife, Louise Boursier—*née* Bourgeois—wrote half a dozen books on her art, that would have done credit to any surgeon of her day. In her last book she is conceded to have talked her male derogators to a standstill.

The professional descendants of these women are practicing safe and satisfactory midwifery in European countries today and 80 per cent of European children are born under the wholesome supervision of women who have had no broad medical education.* But these women have had a thorough and practical training in state institutions, and practice under carefully framed and rigidly enforced state regulations, any fracture of which results in either fine, imprisonment or revocation of license.

The lecturer is undoubtedly correct in holding that we are afflicted with a plague of bad midwives, but the fault lies with us as a community and not with the midwives, who, like the rest of humanity, are just as good or as bad as our law or our enforcement-mechanism obliges or allows them to be. Furthermore, in spite of the hard feelings which the man-midwife for many centuries has felt toward his now much humbled but still numerous female colleague-*consoeur*, as it were—it is probable that the number of women practicing midwifery will continue to increase rather than diminish. This is not only because we are now educating a body of women physicians who instinctively take up obstetrics as a specialty, but in response to a wholesome and permanent public sentiment, existing in

*At the Hotel Dieu, Paris, in 1740-1, there were confined by midwives, 3,743 women. Of these only 5 died, and only 29 children were still born. At the London Lying-in Hospital in 1829, 377 women were confined by physicians and 4 died, with 18 still births.

every community, in favor of women attending women during normal childbirth. That this sentiment exists in every country and every age is obvious to anyone who cares to look over the polyglot catalogue of obstetrical pamphlets in the library of the surgeon general at Washington. Here are a few titles out of many:

P. Hecquet; *De l'indécence aux hommes d'accoucher les femmes. Ouvrage dans lequel on fait voir; pardi raisons de physique, de morale, et de médecine, que les meres n'exposeraient ni leurs vies, ni celles de leurs enfants en se passent ordinairement d'accouchements et de nourrices.* Paris.

Proprietas; *Address to the public on the propriety of midwives instead of surgeons practicing midwifery.* London.

J. Stevens; *Address to the Society for the Suppression of Vice. Man-midwifery exposed; on the danger and immorality of employing men in midwifery proved and the remedy for the evil found.* London.

G. Gregory; *Medical morals illustrated with plates and extracts from medical books designed to show the pernicious social and moral influence of the present system of medical practice and the importance of employing female attendants for their own sex.* New York.

J. Blunt; *Man-midwifery dissected—for the use of married couples and single adults of both sexes. The cunning, indecent, and cruel practices of men midwives, and instructions to husbands how to counteract them. A plan to instruct women in order to supercede male practice. Various arguments and quotations proving that man-midwifery is a personal, a domestic, and a national evil.* London.

These medico-literary products of the early half of the Nineteenth Century are at least diverting. The address of Proprietas to the public in defense of "the British fair," with his peroration, "Husbands! beware of the man-midwife; regard him as the most subtle and venomous reptile that crawls upon the earth," is as good as anything in Dickens. The illustrations which Dr. Gregory has taken from contemporary text-books would do credit to Thackeray or Cruikshank, but the doctor is certainly correct in his protest that the artist has not eliminated the trail of the serpent from his work. Some of these articles were written by men of such distinction that they could hardly have been—at that time—lightly put aside. For example, the letter written to the London Times in 1858 by Sir Anthony Carlisle, late President of the Royal College of Surgeons, raised a vigorous and decidedly human protest against the proposed spread of man-midwifery through extension of the examining and licensing powers of the Royal College of Surgeons.

These pamphlets are not half so wicked in the reading as they sound in their titles, and from a medical standpoint they are, of course, mere curiosities, but sociologically—and perhaps morally—they have a far deeper and more permanent meaning.

There is another reason for the permanent existence of the mid-

wife in our community, which should appeal even more strongly to the independent American than to the individual accustomed to what we choose to regard as the state paternalism of European countries. The midwife is often the alternative which the self-respecting laboring man and his wife choose, rather than accept either charity or subsidized help. And we have still a long way to go before the average parent will give any direct recognition to the proposition that the state has any proprietary right in his child, or that his child is "an asset of the state." The average man insists—and rightly so—on paying at least for his first born, and the most he is apt to care to concede to the state is the privilege of training his wife's obstetrical attendant.

The devices which the lecturer offers us to take the place of the midwife—dispensaries, district nursing, social centers, lying-in hospitals, medical attendants salaried by the state—although conceded to be beneficial organizations supplying service far beyond the means of this average working man, are nevertheless apt, when offered or accepted thoughtlessly, to result in the pauperization of many a family which should be entitled to pay for its own service in its own way, in its own home, and at its own price. Such cheaper service is furnished and can only be furnished through the medium of the midwife, and foreign countries, recognizing the legitimate demand, see to it that this great preventive of the misapplication of medical charity is at the same time also safe and satisfactory.

However much society may profit through local generosity and public spirit, the problem calls for a solution far beyond that furnished by dispensaries, district nurses, social and medical centers, or even lying-in hospitals. In fact, such eleemosynary institutions serve perhaps but to cloud and divert the issue and to retard real advance, through offering but a partial way out of the real difficulty of how to help the parturient woman without training her at the same time to accept charity.

We may grant that the present status of the midwife in this country is bad, but we will also have to concede, for the reasons stated, that there will always exist a large proportion of families who will either through choice or necessity avail themselves of her services, however bad they may be.

Under such conditions, the problem obviously becomes one of making the best of a profession which has such a firm hold on many—whom the lecturer calls "these people"—that it cannot be shaken off.

As to the manner in which society as a series of loosely organized and only partially cooperating charitable units has been meeting this problem, the lecturer has perhaps said enough, except that he has failed to bring out the fact that such uncentralized efforts—mostly charitable—are temporary, sporadic, and altogether insufficient and inefficient in reaching the root of the trouble.

Every right thinking man, however, will uphold him in his assertion that the prime duty of furnishing service and protection for society and for the individual, in this as well as in many other closely correlated directions, lies with society itself—"the solution of the medical problem belongs to the state and to society."

The avenue along which this creative and corrective force should proceed is by intervention of the state and its police power to provide and enforce the technical education and regulation of those who would qualify to engage in midwifery practice. It is the duty of the state—at present shamefully neglected—through its legislative and executive arms to approach this matter fearlessly and without regard for pressure or politics.

Such an approach, however, should be well considered, for our entire community is just emerging from an adolescence already too much prolonged by the retarding influence of laws poorly constructed and impossible of execution. American midwifery is in sad need of a chance to take part in such a legal, moral, and social—not to say scientific—regeneration as that which has been coming over the rest of the medical profession during the passing generation. Such a regeneration in order to be permanent and effectual cannot proceed any great distance simply by administrative process acting arbitrarily and from without; it must proceed from within the profession, and must have the hearty support and cooperation of that better class of midwives who are capable of seeing the benefits to be ultimately achieved through better schools and revised laws.

It does not seem to be exactly in this practical or conciliatory spirit, however, that the lecturer approaches his solution of the problem. The proposition that the midwife should "be equally equipped by education with the physician" is tantamount to offering her an alternative between total extinction and taking a college education. This solution can hardly be taken seriously, because it is neither feasible nor necessary. We can hardly think that the time is within measurable distance when the midwife will undergo the hoped-for annihilation by the simple process of making a doctor out of her. It is asking too much both of legislation and of human

nature to ask the midwife to take a degree, or even an equivalent course in medicine, before qualifying farther in obstetrics. Nor does the situation apparently call for such radical measures. In European countries, and especially those occupied by Germanic races, perfectly competent midwives are trained by law, within a reasonable time and at an insignificant cost, to give safe and satisfactory attention to women during normal pregnancy and labor for the small sums which poor but independent families prefer to pay for such services rather than suffer the degradation of accepting charity or subsidized help. That a midwife cannot receive a thorough training in the treatment of normal labor, and in the abnormities of the pregnant and parturient woman, without qualifying herself to practice medicine is a manifest absurdity, nor is it in any way compensated for by offering to the unwilling parturient the eleemosynary benefits of the dispensary, the visiting nurse, the social and medical center, the undergraduate accoucheur, and the lying-in hospital, as substitutes. Such an alternative is hardly just either to those countless thousands of mothers who wish from motives of modesty or economy to follow their ancestral practice, provided labor is normal, or to those fathers who do not wish to start their children out in the world as public charges. As a choice between two evils, the writer confesses to a sneaking preference for the man who chooses to carry his unpaid bill for his wife's confinement for an indefinite period in his pocket, over the fellow who—more honestly, perhaps—surrenders his independence by having his wife confined at the county hospital.

Evidently, we have the midwife permanently with us because the public demands her and her more aristocratic confreres cannot abolish her. The plain truth would seem to be that the midwife has a permanent and legitimate place in the community, and she should be allowed to fill it under laws which should be reasonable, modern and well enforced. And the state should provide facilities by means of which modern qualifications to practice midwifery can be secured by any Illinois woman without going outside the state.

The midwife should be prepared both in theory and practice to attend normal labor. She should have sufficient knowledge to make her aware of pathological situations both in the pregnant and parturient woman. She should be familiar with the restrictions which the law places on her practice. So much the midwife owes the state, and heaven only knows how far short she now falls in coming up to these reasonable requirements.

But the fault for her short-coming lies now with the state. We

have a right as a modern community to ask for a comprehensive state law which, when enforced, shall bring the status of midwifery up to a standard where it can be compared, without blushing, with that permanently existing in most European countries. It is generally conceded that our present medical practice act under which midwives are licensed, is sadly in need of a general rehabilitation, but nowhere more so than in the sections relative to midwifery.*

Whether the needed remodeling of these sections takes the form of a separate midwifery practice act, or becomes a part of the new

*For the information of those not familiar with the statute, the following extracts from the Illinois Medical Practice Act, 1911, define the present status of Illinois mid-wifery:

Sec. 2. No person shall hereafter begin the practice of mid-wifery in this state without first applying for and obtaining a license from the State Board of Health. Application shall be in writing, and shall be accompanied by the examination fees hereinafter specified, and with proof that the applicant is of good moral character When the application aforesaid has been inspected by the Board and found to comply with the foregoing provisions, the Board shall notify the applicant to appear before it for examination.

Examinations may be made in whole or in part in writing by the Board and shall be of a character sufficiently strict to test the qualifications of the candidate as a practitioner. The examination of those who desire to practice medicine and surgery in all their branches shall embrace those general subjects and topics, a knowledge of which is commonly and generally required of candidates for the degree of doctor of medicine, by reputable medical colleges in the United States. The examination of those who desire to practice mid-wifery shall be of such a character as to determine the qualification of the applicant to practice midwifery. . . .

All examinations provided for in this act shall be conducted under rules and regulations prescribed by the Board, which shall provide for a fair and wholly impartial method of examination: . . .

Sec. 3. If the applicant successfully passes examination, . . . the Board shall issue to such applicant a license authorizing her to practice . . . midwifery . . . provided, further, that those who are authorized to practice midwifery shall not use any drug or medicine or attend other than cases of labor. Such license shall be in such form as may be determined by the Board and in accordance with the provisions of this act: Provided, however, that any wilful violation on the part of an applicant of any of these rules and regulations of the Board, governing examinations shall be sufficient cause for the Board to refuse to issue a license to such applicant. Such certificates shall be signed by all members of the Board and attested by the secretary.

Sec. 6. The State Board of Health may refuse to issue the certificates provided for in this act to individuals who have been convicted of the practice of criminal abortion, or who have by false or fraudulent representation, obtained or sought to obtain practice in their profession, or by false or fraudulent representation of their profession have obtained or sought to obtain money or any other thing of value, or who advertise under names other than their own, or for any other unprofessional or dishonorable conduct, and the Board may revoke such certificates for like causes. Provided, that no certificates shall be revoked or refused until the holder or applicant shall be given a hearing before the Board.

Illinois medical practice act when that archaic document receives its approaching modernization, the law should on that occasion be framed to bring about permanent conditions of which we have no occasion as a community to be ashamed.

The act should provide for a licensing state board of midwifery examiners and inspectors, authorized also to prescribe and enforce a curriculum of study in licensed and inspected institutions. It should prescribe and define the exact limits of practice by midwives, and should provide penalties for violating or exceeding the same. The board should have authority to revoke the licenses of such midwives as have been legally shown to have exceeded or abused the privileges conferred on them by the act. Upon such an examining, licensing, and supervising board the female midwives should have at least one representative. The same act should provide for the instruction of midwives in the prescribed curriculum, by the staff and in the wards of all lying-in hospitals maintained out of public funds, and at such other incorporated hospitals as shall accept supervision and shall satisfy the board that the legal curriculum is being honestly carried out. Such institutions should be privileged to issue diplomas, but these latter should not supercede the state board license. Provision should be made for the examination and licensing of foreign midwives wishing to practice within the state. The act should provide the board with ample police power, not only to enforce inspection, but to secure the punishment of violations both of the written statute and of its own technical regulations. There should be provision for an annual appropriation actually sufficient to make the law something besides a dead letter.

Since the result of such revision of the existing law is bound to effect a radical change in the status of all midwives, it is but just that it should take effect gradually in order not to work injustice against those who by virtue of long residence have acquired certain rights. These rights do not exist and need not be considered in the case of newcomers or recent graduates. If the law is to reach midwives already practicing in the state at the time it goes into operation, it should not be by way of retroaction, but through the medium of inspection and of the enforcement of penalties for violations of provisions applying to all practitioners.

It has already been intimated that such a regenerative process as one is reasonably entitled to expect through a radical revision of our state midwifery regulations must perforce proceed—to be effectual—from within. The movement, furthermore, should proceed not

only from within the medical profession, but should enjoy the active support of the best members of that other sex and profession which is conceded in this state to be doing more than 50 per cent of the hard work of midwifery. It may perhaps be something of a pill for the State and Chicago Medical Societies or the Chicago Gynecological Society to swallow, but the midwives should be invited to, and should receive a voice in, any representative conference which these societies may call together to frame and promote a revised midwifery statute. To do otherwise would, if nothing more, certainly prove poor politics, for such is the perversity of feminine human nature that it would be hardly reasonable to expect "these people" to give their very important support to a bill vital to themselves yet in the framing of which they were allowed no participation.

It would look as though there were but one logical method to be pursued in making any progress toward a law which the midwives would not fight in the making, and fight some more in the enforcing, and finally evade and nullify in the courts. This method lies through the initiative of the Society of which the lecturer is the honored head, acting in conjunction with our City and State Medical Societies, and meeting with representatives of that large class whose numbers at least should entitle them to a voice in the framing of legislation vitally affecting their own livelihood and standing in the community.

THE CONDITION OF THE SURGERY OF THE HEAD AT COOK COUNTY HOSPITAL IN THE NINTH DECADE OF THE NINETEENTH CENTURY.

By BAYARD HOLMES, M. D., CHICAGO.

One of the first patients that Dr. Christian Fenger operated upon during my internship in the County Hospital was an abscess of the brain from a subcutaneous injury of the arch of the left orbit. At that time he introduced to my student notice the use of the aspiratory needle in searching for the deep cerebral abscess.

In examining some old records, the following history of a somewhat earlier case in the development of surgery in the hospital attracted my attention and because it was carefully written, for histories of that time, it is a valuable historical record.

On November 10, 1881, at ten o'clock at night Frank Hunt, aged 29, a teamster of German parentage, was admitted to the County Hospital (31880), suffering of a gunshot wound of the head. A woman, Julia Waters, came with him and claimed to be his wife for twelve months, but the patient's sister denied the marriage. The patient was shot at his home 141 West Washington street by a neighbor, Horace Runyon, the shooting occurring at 5 p. m. November 9th. He was treated by Dr. Paerrin at once and sent to the hospital the following morning.

When he arrived at the County Hospital he was examined, but not considered a hospital case; that is, he was not considered in need of treatment. He then went downtown, testified in court, signed his name naturally with his right hand and answered questions coherently for some time, but while in the witness stand when asked another question, he placed his hand to his forehead, moaned audibly and from that moment was speechless. He was brought back to the hospital on the evening of the same day, November 10th, at 10 p. m., and admitted.

There was a wound on the left side of the head midway on a line between the outer canthus of left eye and upper part of pinna of left ear. The wound presented all the appearances of a wound made by the entrance of a small bullet. It had a clean margin, and was probed by Drs. L. L. McArthur and Frank Billings, internes, though "they did not reach the bottom of the wound they deemed it unadvisable to push exploration further." The wound was dressed "a la Lister," but the dressing was soon pulled off by the patient. There was no discharge from the wound.

The patient was put to bed and given on ounce of fortified oil and ordered a drachm of solution of bromide every three hours during the night. About every half hour during the night he would get out of bed and search for his clothes. He would stop and try to understand when spoken to in a loud voice, but could not answer. At one o'clock on the morning of the next day, November 11th, the nurse noticed that he had lost the use of his right hand. "After being up and around he drops to sleep quickly and then after 10 or 15 minutes wakes and gets out of bed again."

A diagnosis was now made that the bullet had in some way

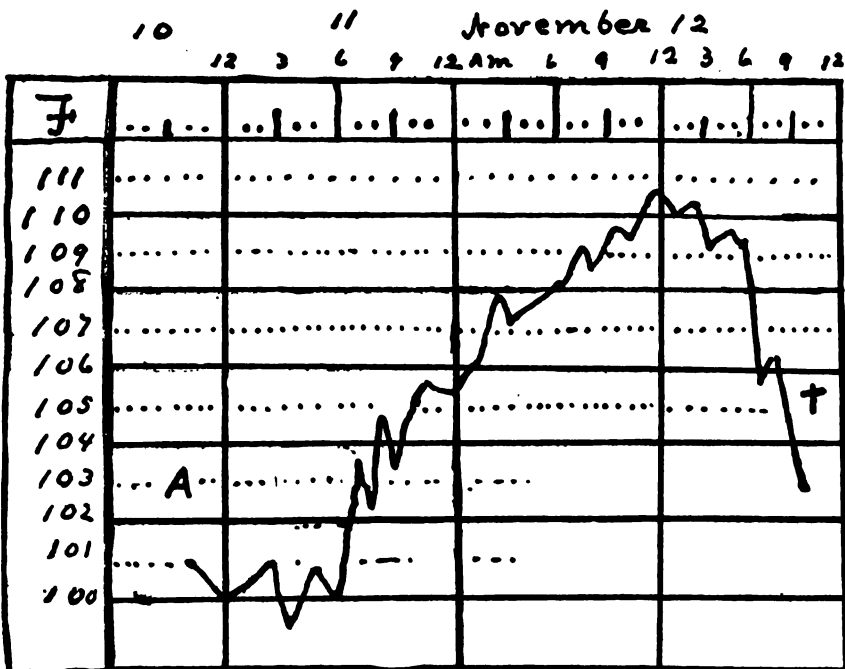


Chart of temperature. Frank Hunt, Nov. 10, 10 p. m. Nov. 12, 11:30 p. m.

"perforated or disturbed" the convolution of Broca. The foreign body had probably set up an inflammation and produced pressure by pus or blood, which had extended up the convolution named from the lower or anterior extremity of it, reaching the center for the function of articulation which is supposed to be located in the convolution when it embraces the upper branch of the fissure of Sylvius. The degeneration of this center occurred about nineteen hours after the wound was made. Twelve hours later, or thirty-one hours after the injury, the paresis of the right hand occurred. This goes to

prove that the inflammation had reached the center for the upper extremity. Paralysis of the right side of the mouth was awaited. It came on at 10 o'clock the next morning.

Quinine and bromides were given and the patient was put in a straight jacket which was ordered by Dr. Christian Fenger. He made great efforts to leave the bed and struggled terribly until death came in high fever. His spasms and high temperature before death were treated with ice packs. Patient was completely paralyzed before death which occurred at 11:30 p. m., November 12th.

The autopsy was performed by Dr. Christian Fenger 39 hours after death, on November 14th at 2:30 p. m.

1. The left temporal muscle was ecchymosed, the bullet having entered the skull three-quarters of an inch above the left zygomatic arch midway between the outer canthus of the eye and the upper part of the ear.

2. On removal of the calvarium the left hemisphere was more prominent than the right.

3. The left hemisphere was a dark brown due to the blood shining through the dura. The right side of the brain retained its normal whiteness.

4. Longitudinal sinus normal but contained coagula.

5. No hemorrhage between cranium and dura hence the hemorrhage is not from the middle meningeal artery.

6. Dark red lines along the vessels beneath the dura of the right side and blood in subarachnoid spaces, due to hemorrhage from the vessels of the pia mater.

7. Beneath the dura on the left side were found coagula of blood, some old some new, mingled with pus cells, diagnosed from cells of brain by the microscope.

8. Part of the coagula was adherent to the inside of the dura, due to inflammation on the inner surface of the dura.

9. In the upper, posterior temporal region were found pus cells.

10. On the removal of the dura blood exuded from the anterior, superior temporal region, therefore a cavity was suspected below.

11. Left side of brain is a little softer than the right.

12. On the most careful removal of the brain, the ball, .22 in., was found in the right temporal fossa between the dura and pia.

13. The ball passed through the upper part of the large wing of the sphenoid, then through the dura in which it left an irregular lacerated hole, small spicula of bone from inner plate of the skull

were found just inside the skull and a little piece of lead was found on the outer side of one piece of bone.

The probe was carried through the track of the ball by its own weight, showing that its entrance into the brain was at the external posterior part of the left frontal lobe in the anterior extremity of the convolution of Broca and having its exit at the same place in the opposite side of the brain, i. e., in the external posterior part of the right frontal lobe.

DEATH FROM ENCEPHALITIS IN THE TRACK OF THE BULLET.

During the spring of 1886, while I was assisting Dr. Fenger in his work, he had, as a patient, a saloonkeeper on Madison street near Ashland, who had been shot in the temporal region and had an intracranial infection. In discussing the indications for operation he said he believed that drainage should be secured. He advised the opening and draining of the ventricles and volunteered to undertake the operation, but for some reason the work was not done. At the autopsy, I made cultures from the cerebrospinal fluid and microscopic examinations of the pus, which convinced Dr. Fenger that his diagnosis was sustained.

During these two years 1886-1887, it was a constant determination on Dr. Fenger's part to treat wounds and infections of the head with the same principles in mind as he had found successful in wounds and infections of the chest and abdomen. He was thoroughly familiar with the physical effects of gunshot wounds not only from his experience in the Franco-Prussian war but from his subsequent studies of Lucas Championniere, von Beck (*Moderner Gewehrprojectile*), Kronlein's epoch making article (*Duet. Zeitschr. f Chir.*, Mar., 1886), Schondorff (*Otitis media*, 1884), Moran (*Kopfverletzung*, 1884), Hessler (*Eiterungen im Warzenfortsatz*, 1885), Bull (*Sinus Thrombosis*, 1885), von Bergmann (1880), and the Scandivanian and lesser German authors in diseases of the ear and nasal sinuses, beside the papers of his colleagues in the American Surgical Association of which he became a member in 1883, one year after Dr. Senn was made a fellow.

He often spoke of Moses Gunn's article in which he went contrary to American and European custom (1882), and especially of J. B. Roberts' contention for drainage (1886), in wounds of the brain. I feel very sure that he had no real conception of mastoid antrum infection at that time as I saw him operate for cerebral abscess of otic origin without meddling with the middle ear or the antrum. Of course, he knew that the antrum was the source of the

abscess in some cases but he attributed too much to the possibility of infection through the tegmen tympani.

Once in the County Hospital I saw him operate for a cerebellar abscess and failing to find it discovered a sigmoid sinus thrombosis, but no examination was made of the antrum. We can feel quite sure that Fenger at this time did not fully credit the role of bacteria in surgical reaction. In the winter of 1885 and 1886 I showed Dr. Fenger the micro-organisms I had cultivated from several abscesses in my "ward 2" patients. He was delighted and insisted upon spreading out the little colonies on coverglasses, staining them and examining them under his own little Hartnack. He was charmed by the color of the *S. p. aureus*. He was astounded by the liquifying of the gelatin by the staphylococci and the tack shaped growth of the streptococci on the same media.

He did not trust much to the possibility of union of wounds without drainage except on the face and scalp. Even here he used to put in little drains of iodoform gauze during my assistantship (1886-7).

Dr. Fenger made many notes on the surgery of the head and gave very interesting lectures on the subject, but he never published any extensive monograph, as I am sure he planned to do (comp. *Basal Hernias of the Brain*, 1895). It seems unfortunate that he never made any extensive contributions to clinical surgery in the form of a systematic compend. No one had a broader perspective of anatomy and pathology than he had to stand on and no one ever contributed so substantially to the surgery of the joints, the thorax, and the biliary and urinary ducts as Fenger did.

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108 NORTH STATE STREET.

THE ORTHOPEDIC TREATMENT OF NON-TUBERCULOUS CHRONIC JOINT DISEASES.

By DR. JOHN RIDLON, CHICAGO.

By orthopedic treatment of the non-tuberculous joint diseases I understand something distinct from the medicinal and operative treatment with which it often has to be associated. The general practitioner and the internist as well as the general surgeon may fail to obtain the best functional result at the diseased joint from lack of knowledge of or appreciation of the principles of orthopedic practice and the simplest of orthopedic procedures. To illustrate: In that rather common affection, gonorrheal inflammation of the knee joint, both the general practitioner who treats it conservatively and the general surgeon who opens the joint and washes it out often have as an ultimate result a somewhat flexed and a stiff knee because they have failed to fully straighten the limb at the knee joint and immobilize it in the straight position until the knee was no longer diseased. Stiff knee joints from synostosis between the femur and tibia are very rare, but from synostosis between the patella and femur are very common. At a sensitive knee joint motion is restricted by muscular action, and if the knee is somewhat fixed the very strong quadriceps muscle draws the patella firmly down upon the condyles of the femur; whereas if the knee is fully hyperextended the patella is not thus pressed down upon the condyles but often floats at some distance from the condyles and does not become adherent.

In the treatment of any joint disease the practitioner can not know with absolute certainty until the disease has been cured whether the joint is going to be absolutely stiff, or somewhat stiff, or have normal or practically normal motion. Therefore the first orthopedic principle in the treatment of all diseased joints is to put the limb in such a position that it will be functionally most useful to the patient in case it is stiff when it is cured, and to maintain it in that position. The limb should be put into the desired position as rapidly as possible; while the disease is still active, and before healing has commenced, for changing the position after healing has commenced delays the cure and in many conditions adds to the risk to the patient.

The second orthopedic principle is to immobilize a diseased joint for as long as the inflammation is progressive. When the inflammation has become retrogressive the joints in some diseases may be allowed motion, but motion mechanically checked well within the limits set by nature and indicated by the muscular spasm. The

joints in other diseased conditions should be immobilized until they are cured. To illustrate: The gonorrheal joint should be immobilized until it is cured, but the osteoarthritic joint may be allowed some motion when the inflammation has become retrogressive. Retrogression of the inflammation may generally be assumed when the pain and sensitiveness has passed.

The third principle is: In attempting to immobilize a joint it is necessary to grasp the entire region occupied by the muscles that move the joints. Illustration: Muscles moving the knee joint arise from the pelvis and other muscles are inserted into the foot; so that to immobilize the knee with a plaster splint the splint must embrace the foot and be carried on to the pelvis. Plaster splints that reach only to the upper part of the thigh in the treatment of a diseased knee that is somewhat flexed are far from efficient, and splints starting on the foot and ending midway between the knee and perineum are not only useless, but are the strongest kind of evidence that the man who applied them is lacking in mechanical sense.

The fourth principle is: Deformity at a diseased joint cannot, as a general rule, be corrected while the patient is allowed to walk around; all cases with deformity should be treated in bed until all the deformity has been corrected, and until there is little or no tendency for deformity to develop.

The means for immobilizing joints to be considered are: Plaster splints, steel braces, and splints and braces made of leather reinforced with steel. For so long as the disease in the joint is progressive (with the exception of tabetic joints) the plaster splint will generally be found to be the most satisfactory. Every general surgeon and general practitioner who does any fracture work ought to be able to put on an efficient plaster splint. But with steel braces and with leather reinforced splints it is quite a different matter. Unless the doctor knows just what kind of brace he wants to use, and can himself measure for it; make drawings and specifications that any brace-maker can follow; unless he can modify and fit the brace himself without the help of the brace-maker, and unless he does do this he ought not to attempt to use a steel brace. The 25 per cent temptations of the larger surgical instrument shops ought not to weigh in the balance with the doctor's reputation. For failure to treat a case properly means injury to one's reputation. With leather splints reinforced with steel it is somewhat easier to get what one wants from an instrument maker, if one knows what one wants and is willing to make some personal effort. A leather splint must be made on a plaster form of the part to be covered by the splint. To get this plaster

form for the brace-maker the doctor should put on a plaster splint; carefully remove it; bring the cut edges together and seal them; pour plaster cream into this shell; when it has set, remove the shell and smooth the plaster form with knife and sandpaper, and upon this draw the outlines of the leather splint and the steel reinforcements.

To send to a brace-maker a rough plaster shell of a deformed limb and expect him to make a brace to hold the limb when the deformity has been corrected is asking too much. But men who pose as orthopedic surgeons have done just that.

In contemplating the orthopedic treatment of diseased joints one should always ask one's self:

Just what am I trying to do?

Is it worth doing?

Am I doing it?

Aside from splints and braces in the treatment of non-tuberculous chronic joint diseases, the orthopedist forcibly breaks up stiff joints (and sometimes injects them with vaseline); gives passive and active movements and massage; uses light baths, baking ovens, vibratory machines and static electricity.

The vast majority of chronic non-tuberculous joints are the osteo-arthritis joints. These should be immobilized in plaster splints, using a reasonable degree of force to correct any existing deformity; the patient should be kept in bed, and the splint changed every two weeks until the deformity has been corrected as far as possible by such mild measures. The splints should be continued until joint inflammation has become retrogressive as evidenced by absence of pain and tenderness for some time. Then the stiff joint can be forcibly broken up; immobilized in plaster for not more than 10 to 14 days, and then treated by movements, massage, vibration, baking and sparking. If any tendency to contraction deformities returns it should be understood that the disease is not in the retrogressive stage, but is still progressive, and continuous immobilization should be resumed.

The next most common form of joint disease that we see is the coccus joints, and the gonococcus is the most frequent offender. These are treated along the same general lines as the osteo-arthritis joint. But one must be far more careful about too early passive movements, and particularly one must be careful not to forcibly break up such a joint until all evidence of inflammation have long since passed. The only permanently stiff gonorrheal joints that I have ever seen have been those that have had passive movement and forcible breaking up too early.

Tabetic joints cannot be cured, but they can be so well braced that they can be used with much satisfaction.

MENTAL THERAPEUTICS.*

By OSCAR J. PRICE, M. D.

In casting about to discover some new theme, as yet but little touched upon in the discussions of this Club, it occurred to me a consideration of the influence the mind exercises over health and its recovery from disease, would be a suitable and profitable topic.

I feel quite sure the rank and file of the profession are given to underestimating this factor as a therapeutic agent. And yet, I think it can be demonstrated that it plays an important part.

Our healing powers are not all included in medicine and surgery. Most of us are willing to admit, in a half hearted way perhaps, the curative power in mental processes, but few are sufficiently impressed to try any practical demonstration of them. Thereby we not infrequently overlook and fail to employ a most potent remedy. Not that I would wish to be understood as underestimating the usual methods of treatment, either medical or surgical, but that I would emphasize in addition thereto, and as an aid thereto, a recognition and employment of mental influences.

An intelligent appreciation of the influence the body has over the mind—it will be admitted is very necessary to the success of the physician. It is equally necessary to appreciate the influence the mind has over the body. And it is the wise physician's province to adapt his measures to both. Our patients not infrequently remind us of their confidence in us, and assure us that without this confidence we would be shorn of much of our power. This is an evidence in itself of the power of mind over matter. And what shall we call the force we are exercising to bring about this confidence? Is it "Personal Magnetism"? Is it the subconscious influence of "Suggestion"? Is it by "Touch"—or the "Laying on of hands"? Whatever it is—it must be admitted it is a power largely exercised through the mind, and whether used unconsciously or by intent is a force we cannot afford to ignore.

Is there such a thing as the "Gift of healing"? Something that is not acquired—or a part of our education? Something the outcome of an inherent natural, or vital force, more or less within the possession of all? Yes; I think so; and that it is an inborn power, perhaps a quality from birth, and closely allied with the sympathetic in our nature—and not confined to the medical profession. An in-

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vestigation of the subject would indicate this to be true. At the very outset of such an investigation I wish to give all credence to the belief that a higher power than human is frequently the medium of accomplishment of the mental therapeutics under consideration. Form and force, the material and the immaterial, matter and spirit, body and mind, are all under this higher power and governed by His great system of laws. There is a life force, a nerve force and a mind force, subordinate to—dependant and reacting upon—each other. And the power of each part of the whole influences profoundly the conditions of the rest. The mind in this present earthly state exists in the most intimate connection with the body.

But there is not only the relation which exists between the different parts of the body or being, but a certain something which goes out of and beyond ourselves, affecting in a pronounced manner the relations existing between different individual beings, thereby influencing in no small degree men's opinions, feelings, and powers of action.

Therefore it is proposed to direct attention not only to those qualities of our nature which pertain to the body and mind—but to the instinctive impulses which govern individuals in their relations to each other. It must be admitted these hidden forces are often obscure and not easily defined even when confronted with the most positive evidence of their existence. We do know that there is a sympathy of relation existing between different parts of an organized body or being, and between different individual beings, in consequence of which the conditions and actions of one of the organs or parts, or of one individual, are affected by the conditions of others.

We also know that when this sympathy of action is disturbed the effect produced is that of antagonism. Examples without number might be cited in illustration. The brain, the organ of the mind, is sympathetically excited by the nerves of sense in various ways. Thus the passions of various kind have much control over physical action.

Joy, fear, anger, love, sorrow, scorn and hate, all through the medium of the brain and nerves, affect in a material manner physical functions. Anger, fear and grief disturb the circulation, respiration and digestion. Fear and joy affect the heart and circulation; grief the digestion. Thus we speak of "the paleness of fear," and "the breathlessness of surprise." Also "the bowels of compassion." Hunger and mental irritability are often associated, so that "a sour temper"

is often the companion of "a sour stomach." A dream, it may be caused by an indigestible article of food, may leave a weight upon the waking thoughts, and this in turn may depress the bodily functions, so that through this close connection there may be "a dream which is not all a dream." Bad dreams may be the consequence also of evil deeds.

Shakspeare makes the conscience stricken Clarence say:

"O, I have had a miserable night,
So full of fearful dreams, of ugly sights,
I would not spend another such a night,
Though 't were to buy a world of happy days."

Also the effects of remorse, as portrayed by that great poet of nature in "Macbeth" are sufficiently familiar. Convulsions, delusions, uncontrolled emotions, neuralgias and impaired functions of almost every kind may depend upon, or be connected with, this morbid antagonism.

And as the organs of the body and the functions of the mind are united in the individual being, so different individuals of the same human family are bound together in one specific and social organization, each having facilities for bringing him into close relationship to his fellow-men. As operating between individuals, this sympathy of action includes the disposition to imitation on the one hand, and the power of influence on the other. And this propensity to imitation, and this power to influence and to lead are in ceaseless operation wherever men are brought together, but existing in very different degrees in different persons. "The masses imitate, the few lead." The marvels of mesmerism, witchcraft, spiritualism—ancient and modern, hypnotism, telepathy, somnambulism and the like, are no doubt largely due to this influence of sympathetic imitation, operating in an unusual and excessive manner.

And these traits do not depend upon any preternatural endowment, but spring from an all-pervading, indispensable principle, without which the ends of our being would not be answered. The members of a "spiritual circle," while sitting about a table in silence, with their hands pressing upon it till all begin to act in concert together, tipping and moving it about, are only doing in an unusual manner what all of us do more or less when associated together in sympathetic union.

And it is this same principle for good or ill, that shapes the impulses, the views and the conduct of individuals generally.

This finds illustration in prevailing mental movements, originating in some obscure and outward source, but becoming general, and like the atmosphere around us, really exerting an unconscious but inevitable pressure.

These waves of excitement may be good or they may be bad. We may have from them all the horrors of the French Revolution, or the glorious results of great political, social and moral reforms.

Murders, robberies, suicides and other crimes, have often prevailed as epidemics. Epidemics of convulsive affections have often been observed in young ladies schools and in nunneries. Religious epidemics are common. The "Shakers," a society existing in various parts of the country, have from time to time various "dispensations" of physical exercises in their sympathetic excited social worship, which spread as by contagion, the physical phenomena being produced and propagated by sympathetic excitement. Mind is of a dual nature. There is an objective and a subjective mind, functioning separately, yet mutually associated and subject to the control and action of each other.

One might almost say there are two minds in the same individual. Stevenson's fantastical description of "Dr. Jekyll and Mr. Hyde" has much of truth in its conception. We are familiar with the objective mind. The mystery lies in the subjective mind. This is the part that presides over and regulates the functions of the different organs of the body. And these functions may be greatly deranged as a result of its perverted action. As we know, its power is predominant in the field of the reflexes, or from impulses independent of volition. It is then the subconscious mind as compared with the conscious; the subconscious mind transmitting its emotions and inspirations to the conscious mind; being capable of deductive reasoning only, and subservient largely to the dictates of the other part. It is the center of intuition. It is the part of our psychic apparatus amenable to suggestion. And this through the senses from the objective to the subjective mind. The response comes to these suggestions like the automatic reflexes of the body, when the requisite conditions are present. If the suggestions are reasonable and correspond with experience, belief and judgment, they are accepted and the response takes place. But these suggestions must first pass the scrutiny of the objective mind before they are transmitted to the subjective. Belief, judgment, reason and experience must weigh them first before they become imperative to the subconscious mind. When this is not the case the antagonism previously alluded to takes place, and probable failure.

This is where psychology and physiology touch. This gives us a probable explanation of the action and value of "suggestion."

Not that there is the slightest change in the history of a single cell in the process, either for good or ill.

I am aware there are a variety of opinions as to the extent to which this influence of suggestion is capable of being exerted. But it is undeniable that it may be made a curative agent in some cases. It is also undeniable that the individual in whom this sympathetic temperament is strongly marked is brought into much closer relations with his fellow men, and his power with them, if he is a man of power, is proportionately increased. It should certainly greatly aid the doctor in understanding and administering to the wants of afflicted humanity, as it is frequently the silent bond which establishes a feeling of confidence and trust.

A few practical illustrations of its applications may not come amiss. We are all aware of the influence of cheerful surroundings and pleasant environment. How sustaining is hope and trust and confidence. How helpful in distress is sympathy. How comforting in sorrow is loving kindness. How uplifting in weakness is encouragement and assurance.

These are among the most potent agents of our mental therapeutics. And the employment of these mental agencies in some cases is about all there is left to do. Invalids are extraordinarily sensitive in matters pertaining to their condition, and are quick to interpret the slightest indication of what the doctor really thinks about their case. They will also seek to ascertain his opinion through their friends and relatives.

If the suggestions they receive convey hope and encouragement they are receiving mental treatment of a most beneficial nature. The wise physician will not fail to employ these measures. Neither will he permit himself to carry into the sick room a serious and foreboding countenance. Most sick people are inclined to be dejected and pessimistic, especially if their illness is of a serious nature. Their relations and friends are apt to imbibe the same spirit. It is the physicians province to see that these injurious suggestions are not permitted to be made in the sick room. Life itself may hinge upon some careless remark. The desire of the patient to recover and the belief that health will be restored is one of the strongest incentives and one of the most helpful agencies for its accomplishment. I think we are apt to forget with what multiplied force impressions and suggestions come to a "mind diseased." Where it is impossible

to regulate and control these impressions and suggestions, as is sometimes the case, it is better to take the patient away from his friends and the unsuitable environment to surroundings more in accordance with its accomplishment. Cases differ so materially that each one is a "study unto itself," requiring an intelligent perception of the nature of the trouble and a wise adaptation of means to ends.

Tact and diplomacy should be intermixed with drugs and directions. The disposition and the idiosyncrasies of the patient should be studied. This is where it becomes a great advantage for the physician to be well acquainted with his charge. He is thereby fitted to be of much greater service than though he were a stranger. Needless worry and fret are the elements that corrode and eat into our lives, and especially in sickness.

It is possible for the attending medical man by his cheerful manner and his hopeful mien, by his suggestions of recovery near at hand, to dispel much of this—and thereby materially hasten the accomplishment of this much desired result. The physician is by right, and should be in fact, very near to his patients, their trusted adviser and friend. And it goes without saying he should be entirely worthy of the trust. It is not always an easy thing to do to call forth the recuperative power which exists in the mind, the performance of which calls for experience and practice. The aim should be to get into mental touch with the sufferer in a kindly, sympathetic manner. Not that a positively unfavorable prognosis should be kept a secret. For one's own protection and in response to the usual inquiry of relations or friends, it is best in a guarded manner to make some one of them a confidant in this respect, but with the distinct understanding that it is to go no further.

And in determining just how hopeless any case may be, it is well to also keep in view our limitations, and the fact that some most surprising improvements, and even recoveries, take place in embarrassing contradiction of the most hopeless forecast.

The term "suggestion" has been frequently used. Perhaps it is well to more plainly define what is meant by the word. According to Dr. Edwin Ash of London suggestion has been defined "as a means of appealing to the mind, or the process of impressing the mind with a new idea."

Also, "of strengthening a mental impression that is too weak to be of any functional importance." He says: "The simplest way of doing this is by the presentation of the idea that one wishes to implant in somebody else's mind, and the more often repeated

the stronger will be the impression produced, until at last, if not resisted, the new idea will become fixed in the mind to which it has been so strongly presented."

Familiar illustrations of the acceptance of suggestions are to be found in those that are often made casually on the street. No matter how well one may be feeling, the repeated inquiry of two or three friends as to your health, coupled with the remark that you look pale and don't seem well, are pretty sure to bear fruit, and the chances are good that a physician will be consulted soon. Admittedly this can not be made to work in all cases, as all subjects are not equally impressionable. Usually it is not intended that a reliance should be placed upon impressions made upon the mind alone, but in conjunction with medical treatment, and whatever other measures may be found necessary. This makes something tangible for the mind to work upon. This might be termed "indirect suggestion." Mental treatment is not essentially dependent upon hypnotism. The one is made while in the waking state while the other is produced through a hypnotic sleep. It is said that under ordinary circumstances few persons can be sent into this sleep. Not more than one in ten. Careful observation reveals that this sleep is unnatural, that it is sometimes harmful and that it is generally unnecessary.

It is probably a more profound impression than that of simple suggestion. Doubtless there are instances where it may properly be employed with benefit, but its induction seems to be attended with a temporary loss of power and an actual loss of consciousness to surroundings.

Hypnotism is an unnatural sleep, as has been stated, while true and natural sleep may be produced by suggestion. I do not know if any accurate differentiation can be made between the two, inasmuch as similar methods are employed in producing both, but it would seem that there is a marked difference—a difference that has not as yet been explained.

Somnambulism, a condition of half sleep, in which the senses are but partially suspended, can more easily be brought about through simple suggestion. There are varying degrees of impression which may be produced, even to a condition akin to the cataleptic state. Mental anesthesia, or unconsciousness to pain, can be produced in some cases.

No doubt the power of suggestion may be made to apply in a great variety of cases, but in some much more than others. Especially in mental conditions such as psychasthenia—a condition full

of delusions; neurasthenia; the beginnings of mental breakdowns—such as threatened insanity or melancholia; alcoholism, and drug habits; chorea; insomnia; some forms of indigestion—dependent upon worry and mental strain. And many more similar conditions which time does not permit of enumeration. As to the method of employing suggestion, it is usual to place the subject in an easy chair with the eyes closed, and the body in a state of relaxation—the surroundings quiet and reposeful. The patient is asked to earnestly fix his attention upon what is being said to him by his medical attendant, who earnestly enumerates the special conditions for which relief is sought and suggests proper reasons for their removal.

It is important that the mind of the patient should be soothed and quieted to the exclusion of other thoughts. This is a suitable and effective condition for the reception of impressions. As said before, it is not always easy to bring about. But when attained the opportunity is favorably offered for the trial of curative suggestions. It at once becomes apparent that such a condition cannot be entered into lightly or indifferently with any hope of success. There must be a willingness to expend much time and patience in the effort. And there must be complete co-operation. As adjuvants to successful treatments of many nervous conditions, the employment of electricity and tonics may be combined with suggestion, also massage. And this brings us to a consideration of another form of mental treatment mentioned at the outset of this paper, viz., “personal magnetism,” or “the laying on of hands.” The power embraced in the “soothing touch.” While it must be admitted there is much by the way of suggestion in this personal contact, yet it would appear there is an individual vital force or magnetism transmitted in addition.

Magnetism is generally described to be “the peculiar power possessed by mineral substances to attract or repel other masses.” As applied to persons, if it can be so applied, it would mean much the same thing.

It would appear from common observation that individuals are constantly attracted or repelled, to and from each other. As previously stated—a matter of sympathy and antagonism. Where there is the sympathetic attraction, there is the soothing sense of touch. A vital force which may be transmitted through the application of the hand. In some cases it may be made to impart curative influences to others. Some of the soothing effects of massage may be attributed to this influence or force.

The smoothing away of pain by the application of the hand, and

the gentle lulling off to sleep by holding the hand, may be cited as illustrations. There is no question as to such a power being transmitted in this way, from one person to another. Presumably this is a power possessed by all more or less, but by some much more than others. It would seem to be natural, or inherited. The length of this paper precludes further discussion of it. But little more than the outlines have been given, but if what has been said shall serve to awaken interest in a line of treatment as yet but little understood, its object will have been attained.

1537 ADAMS STREET.

VAGINAL DOUCHE THERAPY.

By DR. F. A. BROCKMYRE, CANANDAIGUA, N. Y.

The vaginal douche for cleansing purposes has been used for centuries. As a therapeutic agent, however, it is comparatively modern. It remained for Dr. Emmett to first publish the advantages of large, hot douches, but some thirty-three years ago. Since that time the vaginal douches have constantly grown in favor with nearly all physicians of all schools of medicine, and today no physician would think of treating diseases of the pelvic viscera without its aid.

The Apparatus: Such apparatus as will put the patient to the least possible inconvenience, should be advised. Any method of treatment which becomes irksome is apt to be neglected by even the most conscientious patients.

It is important that the solution come in contact with all portions of the vaginal mucous membrane, whether the douche be used as a therapeutic agent, or for cleansing purposes only. In order to accomplish this, a syringe capable of smoothing out the folds of mucous membrane, while the solution is in circulation over the parts, should be adopted.

It is clear that the current accomplishes most if flowing in the direction of the rugae, and the furrows between them. It is in these furrows that bacteria flourish. A current flowing at right angles to these rugae spends its force upon their summits, and the furrows between are hardly touched.

Any method which forces the solution into the uterus should be condemned. A straight current directed towards the os uteri, if propelled with sufficient force to follow the vagina, almost invariably finds its way into the uterine cavity. On the other hand, a whirling current spends its force against the vaginal wall, smooths out the

folds of mucous membrane, and travels with equal cleansing force in the furrows as on the summits of the rugae. On reaching the vaginal fornices, the current is directed by the cervical surfaces in a whirling manner away from the os uteri.

The Care of Apparatus: The syringe should be so constructed that all its parts can be easily sterilized by boiling or by exposing all its surfaces to an antiseptic solution. It should be used by the owner alone, and for the purpose of vaginal douching only, and no other.

The practice of using a syringe today for giving an enema, and tomorrow for a vaginal douche is pernicious. In many families we find but the one syringe. All members have access to its use, as emergencies arise. It may have been used for irrigating the bowels when baby had cholera infantum. Then the father used it for irrigating his ear when he had otorrhoea, and finally the mother used it, after her last miscarriage, to prevent sepsis. How ridiculous this sounds in these days of asepsis and antisepsis, yet we must admit that these practices prevail.

The Cleansing Douche: Water, boiled first, and allowed to stand and cool to 104° to 95° F. The quantity need not exceed two quarts. It should be used one or twice daily, preferably at bed time, to avoid catching cold. It should always be used before and after the menstrual period, and daily in all cases of offensive or irritating discharges, and in leucorrhoea. I advise the cleansing douche once daily, at bed time, as part of the daily toilet, even in health. It would not seem amiss to add to this a non-irritating antiseptic in selected cases. If the prevalence of gonorrhoea among young men were known to the laity, and if married women were to know that many husbands are not the angels they appear to be, the brides would adopt prophylactic douches on their wedding day, and adhere to them until widowhood.

The Hot Douche: Of first importance for the immediate control of hemorrhage, from whatever cause, is heat. Beginning at a temperature of 110° and gradually increasing to 115° to 120° F. The hot douche should be our first thought in menorrhagia, metrorrhagia, and in hemorrhage from lacerations of perineum, vagina and cervix. In excessive menstruation the amount should be governed by the persistency of the flow, and it should be used daily in the intermenstrual period. Then, too, in hemorrhage from carcinoma and ulcers of vagina and uterus; and in those due to uterine polipi and fibroids, we have no agent at our command so prompt and effectual in tiding the patient over the emergency.

Large quantities of hot, sterile water thrown into the vagina before operations upon the cervix and vagina is an exceedingly valuable hemostatic, and in plastic operations prevents the loss of much blood.

In the various inflammatory diseases of the vagina, uterus, the uterine appendages and in pelvic cellulitis and peritonitis, the hot douche, acting as a vaso-constrictor, relieves congestion, pain and inflammation, and induces the absorption, by the lymphatics, of the inflammatory exudates.

In any variety of dysmenorrhoea, the hot douche is most useful during the paroxysm of pain, especially if the flow is suppressed or scant. It should be continued once or twice daily during the intermenstrual period.

Alum: In solution of any strength up to a saturated solution, may be used for its astringent effect. It is an excellent agent in controlling hemorrhage after cervical and plastic operations within the vagina, as it does not form coagula to interfere with union. In saturated solution, used hot, once or twice daily, for a long period, it is indispensable in relaxation of tissues of chronic vaginitis. In rectocele and cystocele it is perhaps our leading remedy. In solution two or three drams to the pint it is excellent in leucorrhoea, especially if the tissues are relaxed.

Tannin: The infusion of white oak bark and the infusion of pond lily root are often used for relaxation of tissue, rectocele and cystocele, but are not so useful nor convenient as alum.

Hamamelis: Is used for hemorrhage from passive uterine congestion. The hemorrhage is small but persistent, dark and decidedly venous in character. In menorrhagia due to retro-displacement, subinvolution, and hyperplastic endometritis, and in the hemorrhage of purpura, it serves us well.

For the contusion of tissues following rape and for varicose veins of the vulva, and turgescence of the vaginal veins during pregnancy it is of decided service.

Bichloride of Mercury: Is used in various strengths, from 1/2,000 to 1/8,000.

In the preparation of obstetrical cases for labor and surgical cases for operation, by the vaginal route, the 1/2,000 solution is used, followed by copious, hot, normal salt solution. After operations upon the cervix and vagina, the 1/2,000 solution should be used once daily, followed by normal salt solution, to avoid irritation.

In gonorrhoea, the 1/2,000 solution should be used three times

daily, followed each time by normal salt solution. This should be continued for several days, until all germs are destroyed.

In septic cases following parturition or abortion, it should be used to supplement the intra-uterine douche.

In chancre and chancroids involving the vagina and cervix it should be used three times daily. It is a good rule to always immediately follow the bi-chloride douche by normal salt solution.

Sodium Chloride: One dram to the pint, used hot, following immediately after bi-chloride in acute vaginitis, either simple or specific, not only avoids bi-chloride irritation but aids much in relieving pain and inflammation.

In gonorrhoea it is used in place of bi-chloride, after the gonococci have been disposed of.

In cases of indolent cervical ulceration, salt solution used once or twice daily, between the applications of medical tampons, does much toward stimulating granulations, and hastens the healing process.

Used hot and in large amount, it is of decided advantage in congested ovary, ovaritis, salpingitis and cellulitis.

Boric Acid: One or two drams to the pint is an excellent addition to the cleansing douches, as it is germicidal and prophylactic. It is non-irritating and may be used over long periods without producing ill effects.

In saturated solution it should be thought of in acute vaginitis, accompanied by itching and burning, and when the discharge is irritating.

Sodium Borate: Is used in much the same way as boric acid, but being alkaline in reaction, should not be used for long periods. I have seen cases of relaxation of tissues, apparently produced by its use, too long continued.

When the discharge is acid and excoriating, experience teaches me that solutions of any medicament should not be used in too large quantities, nor should they be used too hot.

When the discharge is offensive, creolin, carbolic acid, permanganate of potash, thymol and lysol should be thought of.

Creolin: Gtts. 20 to 30 to the pint, is of most service when the fetor is due to decomposition of blood clots on tissue, as after labor and miscarriage.

In the fetor of carcinoma it vies with permanganate of potash and lysol.

Carbolic Acid: Gtts. 10 to 15 to the pint, is used in the same

conditions, but creolin has my preference. However, when itching of vagina and vulva accompanies, carbolic acid is of most service. On account of its irritant properties it should always be followed by sterile water or normal salt solution.

Potassium Permanganate: 1 to 3,000 would be our choice in offensive discharges if gonorrhoea or chancroids were the cause. In these cases it should be used three or four times daily.

Thymol: Gtts. 20 to 40 to the pint, is used in offensive discharges, and is particularly efficacious in cases over-treated by mercurial solutions, as it tones up the mucous membrane, injured by mercurials, as no other remedy can. In summer weather it cannot always be employed because of its attraction for flies, which make the patient's life miserable.

Hydrastis: In fl. ext., drams iijss to the pint, is indicated in catarrhal discharges when the discharge is tenacious or streaked with blood. It is particularly efficacious in the later stages of gonorrhoeal vaginitis, after the gonococci have been disposed of by the use of bi-chloride, permanganate, etc. It tones up the mucous membrane and stimulates the growth of epithelium.

In erosion and superficial ulceration of vagina and cervix, it is of great service.

Zinc Sulphate: Alone or combined with alum, is of service in chronic gonorrhoea. It does its best work in those cases where the mucous membrane is waterlogged and the discharge is thin.

Lead Acetate: Is used much the same as zinc sulphate, but in cases of pruritus of vagina and vulva is the better remedy.

It frequently occupies a place in the early stage of gonorrhoea, when the pain is intense and inflammation is at its height.

In Conclusion: I wish to say that remedial agents are often selected with too little discrimination. The success of the vaginal douche depends not only upon the technic and the apparatus used, but also upon the proper choice of remedy, and its strength. I have seen cases of vaginal and cervical excoriation and ulceration resulting from the use of antiseptics used too strong. Vaginal atresia is often the result of the same cause. Remembering to always follow bi-chloride, carbolic acid and permanganate by normal salt solution prevents much of this.

No doubt the temperature of the douche is of equal importance and should not be guessed at.

Temperatures much above 120° F. are capable of causing exfoliation of the mucous membrane, and interfere with union in operations upon the cervix and vagina. This accident has happened

too frequently, owing to the carelessness of nurses in preparing anaesthetized patients for operation.

Then again, water should never be used cold. Like every other therapeutic measure, the vaginal douche should be intelligently used, and nothing but happy results can follow.

RED CROSS WORK IN HANKOW, CHINA.

By W. W. PETER, M. D.

Hankow is the Chicago of China, and for its possession both sides fought. The revolutionists took first possession almost without bloodshed, because most of the people were revolutionists. Soon came trainloads of soldiers and artillery from the north, and the revolutionists were driven across the Yangtse and Han rivers. The foreigners protested. Too many bullets and shells were flying over, and occasionally into the foreign concessions. So both sides agreed to do their fighting elsewhere. That is why you in America have been reading of Hanyang, opposite Hankow on the Han River, and Wuchang, opposite also, on the Yangtse Kiang.

The fight sprang up suddenly. Both sides continued to pour troops into this region, and the long drawn out battle began in all seriousness. Something had to be done with the wounded. Neither imperialist or revolutionary armies were prepared to care for them in an efficient manner. So the foreign doctors in Wuchang and Hankow met almost simultaneously and organized themselves for the work. Later both bodies of men were affiliated and a local "Red Cross Association" formed. Funds were solicited from imperialists and revolutionists and from foreigners. The day I arrived in Hankow I stood in wonderment while watching unguarded coolies transfer boxes of "cash" (1,300 to our gold \$1) from a mule cart to the bank. A Red Cross worker informed me that the government had given five million "cash" (\$5,000) to the Association, and that this mule cart and three-coolie outfit had been at work for three days hauling the copper to a safe place. A large consignment of rice had been given by the revolutionists. The generals on both sides recognized this organization and its impartial attitude.

Three other Red Cross organizations appeared. The Japs, with their Russia-Japanese war badges, came by dozens and marched up and down the Bund the first days, for want of anything more to do. Neither army seemed overly hearty in welcoming them. A number of foreign doctors, members of the Red Cross Society of China, came,

occupied the International Hospital building, then nearly completed, and these men did very efficient work. The third body was entirely Chinese. A Dr. Chang was at its head and the financing and actual work was done entirely by the Chinese. Miss Chang provoked much admiration by her heroism on the battlefield, and there was never a want of coolies when her boat full of wounded soldiers arrived at the landing.

Although four Red Cross organizations were at work, the Geneva Convention recognizes only one. Each modern nation has its Red Cross Society, as a part of the International Red Cross Society. In war, each of these units is to have its workers associated with one of the belligerents as one of its personnel. But in explanation: The Red Cross Association of Hankow sprang up to meet an imperative need quickly, the Chinese Society because of patriotic impulses, the Red Cross Society of China (the one official organization) conducted its work in accordance with the International agreement, and why the Japanese workers came I don't know.

A number of Red Cross workers gave up their lives. Most of them were coolies doing the most dangerous work of all—bringing the wounded off the battlefield. One of these men was shot through the fleshy part of his arm, but continued carrying heavy stretchers all that day.

They are excellent patients, these Chinamen. Often from expediency it was necessary to amputate a finger or even a mangled hand without an anesthetic. Not a complaint would these fellows make when they learned there was no one there trained to put them to sleep—the doctor would just have to go ahead and cut. They were willing he should. I remember one man who yelled a great deal. He was more of a hero than a stoic. He was brought in shot through and through in the right upper arm and in the left forearm. He had a bullet not very deep in his thigh. It was removed. This made him so angry that on seeing the bullet he shouted: "Now I am all right. I am going back to fight those cowards. I know what to do now." It took eight men to get him into a ward—four to carry the stretcher and four to hold down the patient.

There were a large number of compound comminuted fractures, due to pointed bullets from machine guns. These bullets were not easily deflected and often splintered the bone. Most of them were shot from Maxim guns. These wounds usually gave much trouble because of dead fragments. These were small, and often becoming disassociated were driven into the fleshy parts and completely hidden. Dirty cotton-padded clothing fragments furnished the infection. The

treatment adopted was to cut down to the bone, extract all visible splinters, round off the ends of the bones, open wound dressing, adaptable splint, and slight extension. For chest wounds morphia was used freely by nearly all of the surgeons. For abdominal wounds, morphia, starvation, no probing or operating was the rule in the great majority of cases.

The soldiers made excellent patients. In the Catholic Mission Hospital, to which I was assigned for a short time, 250 were crowded. They got rice and vegetables twice daily—which was often more frequent and abundant than on the firing line—but after two or three days their resistance would often break down. Most of them were already affected by the scarcity of rice from floods before the war began.

Several interesting cases came into prominence because they recovered. One case was noted by Dr. Cox in which the bullet passed through the patient's head, entering above the supraorbital ridge and leaving near the external occipital protuberance.

Another patient (Drs. Olesen, Cox and Huntley) to all appearances was shot through the heart, the line drawn from entrance to exit corresponding anatomically to the position of the lower half of the heart. The man ultimately recovered.

In all, from eight to ten thousand patients were treated, although as yet no statistics are available.

December 21, 1911.

THE CHICAGO MEDICAL RECORDER

AND
JOURNAL OF THE MEDICO-LEGAL SOCIETY
Pullman Building, CHICAGO

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Editorial.

PAPYRUS EBERS IN ENGLISH.

A medical treatise written seven thousand years ago is rather staggering to the imagination, but such is the fact. Carl H. von Klein, A. M., M. D., a student and scholar of Chicago, well known to the medical profession, has made a translation of the Papyrus Ebers into English. The doctor, who is now seventy years old, has devoted twenty years of constant application to this important but unremunerative work, which is now ready for the press.

About \$5,000 is required to publish it and so far he has secured six hundred subscribers at \$5 each. Four hundred more subscribers are required at once. There should be no trouble in securing the number but it is quite beyond the power of Dr. von Klein at present. Those who have not so far had the privilege of subscribing should do so at once. There are plenty of men of means interested in science who would be willing to advance the entire amount.

THE MEDICAL RECORDER will be glad to receive any subscriptions or other aid toward securing the immediate publication of this manuscript, and will promptly turn over to Dr. von Klein everything that may be sent to us.

TEACHING MEDICINE.

Free discussion of methods of teaching medicine was the order in the meeting of the Association of Medical Colleges held in Chicago last month. Dr. W. P. Harlow advocated the utility of teaching medicine by mail to a limited extent. Dr. C. M. Jackson pointed out defects in the lecture system of teaching and urged that the present order be changed so the student might see clinics before he took the lectures.

Such open free discussion, while apparently presenting radical ideas, will do great good. Present day methods of teaching medicine are greatly advanced over the methods of former years, but four years of study does not seem to fit a student for practice as well as it should.

Certain fundamental facts concerning the cause of disease, its course and its treatment might well come first in a course of medical study and they might even be taught in high school courses. Such truths as the positive power of vaccination to prevent smallpox, the relation of germs to disease, their toxins and antitoxins, the main facts of sepsis and antisepsis and their relation to wounds, all are so clean cut and positive that they can be taught by mail and every adult boy and girl should understand them.

MONUMENT TO DR. SENN.

We learn through the columns of the Chicago Tribune that a fund of one million dollars was left seven years ago to the trustees of the Art Institute of Chicago as an endowment by the late Benjamin Franklin Ferguson. The proceeds from the fund were to be used for "the erection and maintenance of enduring statuary and monuments of stone, granite, or bronze, in the parks, along the boulevards, and other public places, commemorating worthy men and women of America, or important events of American history."

THE MEDICAL RECORDER takes the liberty of suggesting to the trustees of the Art Institute the name and the deeds of the late Dr. Nicholas Senn as most worthy of their consideration and one whose name is worthy of perpetuation in some enduring manner.

CONTAGION FROM KISSING.

Several years ago the health department of Chicago suggested that kissing might be a source of infection in tuberculosis. The funny paragraphers made the most of it and it went the rounds of the newspapers, heaping more or less ridicule upon the department. Now the press dispatches bring the news that the health officer of Cleveland, Ohio, has placed the responsibility of an outbreak of disease among ladies following a social afternoon, to the habit of ladies to kiss one another on such occasions.

Coughing and sneezing are recognized as sources of contagion, and kissing the lips moistened with saliva must be more so. How frequently such diseases as tuberculosis, pneumonia, diphtheria, scarlet fever, and pyorrhea of the gums are caused by kissing it is difficult to say, but physicians who have seen chancre of the lip from this cause look upon kissing as a serious menace.

REPORTING BIRTHS.

Now that the Cook County Commissioners have appropriated money for the express purpose of paying for the reporting of births, it is to be hoped that every physician will promptly do his full duty. He now can be punished for failure to report births and if the law should lay a heavy hand upon delinquent members of the profession small sympathy will be extended to them. It is to be hoped the county clerk will press the matter persistently until every birth in the county will be recorded upon the public records as faithfully as every death is now recorded.

Medico-Legal.

A CORPORATION'S LIABILITY FOR MALPRACTICE.

As a corporation cannot practice medicine, so it cannot be held liable for malpractice, says the Supreme Court of Ohio in *Youngstown Park & Falls Street Railway Company v. Kessler*, 95 *Northeastern Reporter*, 509. Plaintiff was injured by the defendant street railroad company while acting in the capacity of a common carrier. The company promised to send medical aid, which was done. Plaintiff was not only not benefited by the medical services provided, but claimed that she was injured thereby because of improper treatment, and instituted action against the company on the ground of malpractice.

The court held that, while a corporation may be held liable on its contract to furnish medical aid where it was careless or negligent in procuring a proper physician, it cannot be liable as for malpractice because of the physician's mistakes or incompetency.

UNDUE INFLUENCE—PROBATE—APOPLEXY.

In the matter of the probate of a paper propounded as the last will and testament of Alice Eliza Benjamin deceased, the Surrogates' Court, New York City, September, 1911, held that the law is liberal in its definition of "capacity to make a will" and a person who has suffered from a stroke of apoplexy, producing permanent physical defects, may yet have a disposing mind. Gifts to persons occupying confidential relations to a testatrix are not in themselves sufficient to prove undue influence exerted over such testatrix by the beneficiaries. Undue influence must be established independently of relations or mere opportunity.

The common law of evidence has only an indirect authority on procedure in the courts of the surrogates. It is the product of the jury system, where it finds its better application. The opinion of sanity experts, based on trivial facts and unrelated circumstances covering years of time (such facts and circumstances being repeated to the experts by counsel in a hypothetical question), is not controlling upon the surrogate, who must reach his own independent conclusion from all the evidence in the case.

The will of a woman, without ties, or the responsibilities of family relations, who gives her residuary estate to her physician, and to a faithful friend and associate living for a long time under her roof and ministering to testatrix, upheld under the circumstances of this particular cause—the estate being moderate and the will adequately established by impartial witnesses of weight.

COMPETENT EVIDENCE.

385-15936. October 25, 1911. Smith, appellee v. Chicago City Railway Company, appellant. Appeal from the Superior Court of Cook County. Reversed and remanded. (Baume, P. J.)—**NEGLIGENCE—RES IPSA LOQUITUR DECLARATIONS—PLEADING—GENERAL ISSUE—DAMAGES—EVIDENCE.**—1. Where the negligence charged is general and relates to an instrument wholly within the control of the defendant, the doctrine of *res ipsa loquitur* is applicable. 2. Declarations of pain and suffering are competent only where made as part of the *res gestae*, or to a physician during treatment, or upon an ex-

amination prior to and without reference to an action for damages, unless the examination is made at the instance of the defendant with a view to the trial. 3. Within the meaning of the foregoing rule an osteopath is a physician. 4. A plea of not guilty, in an action for personal injuries, does not put in issue the question whether the car through whose operation the plaintiff claims to have been injured was owned or operated by the defendant, as alleged in the declaration. 5. It is error to instruct the jury that they may estimate the plaintiff's damages in an action for personal injuries from the facts and circumstances in proof and by considering them in connection with their knowledge, and experience in the business affairs of life, without limiting the damages so to be estimated to damages for physical pain and suffering. 6. It is error to instruct the jury, that, if they believe that either party has the means of producing proof bearing upon the issues of the case, and has not produced such evidence, or accounted for its non-production, such non-production raises an inference that the proof, if produced, would be unfavorable to the party who has the means of producing it, where there is no evidence tending to show that the appellant had failed to produce any proof in its possession. F. B. Hussey and Watson J. Ferry, for appellant.

Book Reviews.

NERVOUS AND MENTAL DISEASES. By Archibald Church, M. D., Professor of Nervous and Mental Diseases and Medical Jurisprudence in Northwestern University Medical School, Chicago; and Frederick Peterson, M. D., Professor of Psychiatry, Columbia University. Seventh edition, revised. Octavo volume of 932 pages, with 338 illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$5.00 net; half morocco, \$6.50 net.

That this volume has far outgrown its original limitation is quite certain. It is now not only a text book but has become one of the most authoritative works of reference in the English language. As a text-book for senior students and practitioners it remains one of the very best, as it is probably one of the most universally used. The clear, concise, scholarly style, the admirably analytic reasoning makes the usually complicated and difficult subject of neurology clear to the student; while the logical discussion of all recent or moot points in pathology, the inclusion of the very latest discoveries in the scientific field, the surety of finding whatever obscure point that may

arise fully discussed and one's decision aided by an opinion founded upon extensive experience and mature judgment, place it upon just as high a plane as a work of reference.

This last edition has been thoroughly rewritten and revised. Some subjects that have been rendered obsolete by the rapid march of experimentation have been omitted, while the later discoveries and the most advanced speculation have been clearly stated, discussed, and opinions expressed. It is a work of supererogation to express praise of a work in its seventh edition, one that is universally used in our medical schools, one that is quoted as an authority by almost every writer upon any subject within the domain of neurology.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M. D., at Mercy Hospital, Chicago. Volume 1. Number 1. Octavo of 133 pages, illustrated. Philadelphia and London: W. D. Saunders Company, 1912. Published bi-monthly. Price, per year: Paper, \$8.00; cloth, \$12.00.

It has been insisted by many of the most experienced men in the medical profession that it was a great mistake that so much of the clinical work of our hospitals should go unrecorded, be wasted in fact. It is true that some of our larger institutions publish annual reports, but only a small part of this material is clinical in character. The case record coming from the hands of some experienced clinical master is to the physician what the precedent, the decision of a judge of one of our higher courts is to the lawyer. It aids him in unraveling and advising upon a complicated case, it aids him in his differential diagnosis and in his treatment. From clinical records he can see the evidence, the symptoms upon which other men have founded their diagnosis, can follow their reasoning, and then can base his treatment upon their results. It was this that made the older books such as Graves' or Trousseau's Clinical Medicine of such great value. More recently we seem to be realizing the great importance of this way of making permanent the teaching of experience, as evinced by the Case History Series published by W. M. Leonard of Boston, and now by the work under review "The Surgical Clinics of John B. Murphy, M. D."

In certain respects this is a new departure in the presentation of this form of record. They are verbatim stenographic reports of the surgical clinics for practitioners held by Dr. Murphy at Mercy Hospital, Chicago. That these reports will be of great value and will be accepted by the profession as the opinion and decision of one of the judges of the supreme court in surgery cannot be doubted. Their

presentation in this stenographic form will retain to a marked degree all the force and character of the personal delivery of this distinguished surgeon.

The wide range of these "talks" may be gathered from the following selection of subjects from the contents: "Tumors, of the Breast-Shoulder-Pelvis," "Nerve Anastomosis," "Exploratory Laparotomy," "Diseases of Joints," "Duodenal Ulcers," "Salvarsan," etc., etc.

These reports will at once take rank among the most important publications of our present time. They are to be issued once every two months, illustrated whenever necessary. They are gotten out in convenient form and excellent style by the publishers, W. B. Saunders Company.

PRINCIPLES AND PRACTICE OF PHYSICAL DIAGNOSIS. By John C. DaCosta, Jr., M. D., Assistant Professor of Clinical Medicine, Jefferson Medical College, Philadelphia. Second edition, revised. Octavo of 557 pages, with 225 original illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$3.50 net.

This second edition of DaCosta's Principles and Practice of Physical Diagnosis has been thoroughly revised both as to text and illustration. Much new matter upon subjects of recent investigation has been added. As examples one might cite syphgmomanometry, nodal rhythm, pleurisy, and lobar atelectasis. The adherence throughout to that fundamental principle of all diagnosis, of interpreting morbid objective data—individual or grouped—on the basis of pathologic cause and physical effect and analysing such findings in the light of full clinical inquiry, places the work at once upon that scientific and logical basis from which alone can a sound working knowledge of the subject be obtained.

That this is one of the best text books upon the physical diagnosis of thoracic and abdominal diseases that can be placed in the hands of students is beyond doubt. The book as to paper, printing and illustrating is gotten out in fine style by the publishers, W. B. Saunders Company.

OPERATIVE OBSTETRICS, INCLUDING THE SURGERY OF THE NEW BORN. By Edward P. Davis, M. D., Professor of Obstetrics, Jefferson Medical College, Philadelphia. Octavo volume of 483 pages, with 264 illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$5.50 net.

Prof. Davis has certainly rendered a great service to the profession by writing this book. In it he not only gives the result of his

own great experience but has compiled the results of the studies and experience of the other men working along these lines. As he aptly says in his preface: "The recent development of obstetric surgery has reached a point where it seemed that a concise statement of methods of operating at the present time might be of service." It certainly has reached such a point and his work now renders it unnecessary for the obstetrician or the obstetric surgeon to refer to systems of surgery, obstetrics, or gynecology to obtain what he wants. The work is complete in scope and detail, and bears throughout, as such a book should, the stamp of experience.

It is divided into four parts, with an introduction treating of such matters as the asepsis of the birth canal, the technique of obstetric surgery, etc. In Part I, under the head of The Surgery of Pregnancy, we find chapters upon the removal of uterine tumors during pregnancy; emptying of the uterus before viability, after viability, and before full term; operation for appendicitis; abdominal section; ectopic gestation. Part II, The Surgery of Labor, containing chapters on extraction through the vagina; delivery by forceps; section of the pelvis; delivery by abdominal section, etc. The Surgery of the Puerperal Period, Part III, takes up such subjects as removal of placenta; control of hemorrhage; the immediate, intermediate, and late repair of lacerations; uterine displacements, and puerperal sepsis. Part IV is devoted to the Surgery of the New Born, in which the technique of the various operations is developed in a most painstaking, careful manner.

HEALTH AND MEDICAL INSPECTION OF SCHOOL CHILDREN. By Walter S. Cornell, M. D., Director of Medical Inspection of Public Schools, Philadelphia; Lecturer on Child Hygiene, University of Pennsylvania; Director of Division of Medical Research, New Jersey Training School for the Feeble Minded, etc. Illustrated with 200 half-tone and line engravings. Philadelphia: F. A. Davis Company, Publishers, 1912. Price, \$3.00.

The aim of this book has been to present the subject of the medical inspection of school children in a scientific, practical, and detailed form. This is one of the subjects, that, arising practically within the present century, has become one of paramount interest and importance but because of its very newness the details of the work are in a rather chaotic state. The author has attempted from the fullness of his great experience to reduce these details to an orderly array, to provide a system that would be applicable to any locality and could be used by any inspector.

A brief resume of headings will show the scope of the work. First taking up the objects of inspection, he proceeds to administrative considerations. Then follows Section II, "Hygiene," which leads easily to the strictly medical aspects of his subject, viz., "Defects and Diseases,"—where first we find eye strain; then the nose and throat; the ear; the teeth; the nervous system; mental deficiency; deformities; malnutrition; skin diseases; speech, its mechanism, its defects; with closing chapters upon infectious diseases.

The author has fortunately made little or no attempt to incorporate the subject of treatment of the diseased or abnormal conditions, for this, it seems, is entirely outside the scope of school inspection. In spite of occasional errors due to careless or hasty writing, the book is one that every superintendent or inspector of schools will find valuable.

THE PHYSIOLOGY OF FAITH AND FEAR. Or, the Mind in Health and Disease. By William S. Sadler, M. D., Professor of Physiologic Therapeutics, the Post-Graduate Medical School of Chicago; Director of the Chicago Institute of Physiologic Therapeutics, etc., etc. Author of "The Science of Living," "The Cause and Cure of Colds," etc. Illustrated. Chicago: A. C. McClurg & Co., 1912. Price, \$1.50.

In this book the author endeavors to trace the influence of the mind over the body and its various functions. He disclaims all pretension as a pure psychologist but treats the subject entirely from the standpoint of physiological psychology. His book has been divested of all scientific technicality and terminology, and is written in such plain, simple language that the evidence he advances and the conclusions he reaches can be understood by any one. His principal argument is that two of the greatest factors influencing health are the fundamental states of faith and fear,—the one for good or the perfection of health, the other toward depreciated health or the production of disease. Written for the laity, it will surely do much toward the correction of misunderstanding and errors that are exceedingly prevalent.

DISEASES OF THE SKIN AND THE ERUPTIVE FEVERS. By Jay Frank Schamberg, M. D., Professor of Dermatology and Infectious Eruptive Diseases in the Philadelphia Polyclinic and College for Graduates in Medicine. Second edition, revised. Octavo of 573 pages, 235 illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$3.00 net.

This is an excellent reference book for the general practitioner

or for the student who wishes to obtain a general knowledge of skin diseases. It is well written, splendidly illustrated, and contains many valuable suggestions and prescriptions for treatment. This edition has been extensively revised and brought up to date. The chapter on pellagra has been considerably amplified. New chapters have been incorporated on sporotrichosis, grain itch, vaccine therapy, and treatment by refrigeration including the use of solid carbon dioxide. The article on the treatment of syphilis has been entirely rewritten in order to present the new Ehrlich treatment, and a brief chapter on the Wassermann reaction has been added. To those who do not care for the larger treatises on dermatology we confidently recommend this book.

MINOR AND EMERGENCY SURGERY. By Walter T. Dannreuther, M. D., Surgeon to St. Elizabeth's Hospital and to St. Bartholomew's Clinic, New York City. Volume, 12mo, of 226 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$1.25 net.

This little handbook is at least specific in its purpose. It is written for and dedicated to the hospital interne and ambulance surgeon, and one is distinctly conscious of a feeling of envy of the resident staff that possesses it when he recalls the many anxious moments, of doubt and indecision during his own service that such a book would have spared him. The author very properly refuses to use space and time upon many of the subjects that are exhaustively taken up in the ordinarily used text books upon surgery. He also avoids all discussion upon matters of theory, presupposing that his readers are already familiar with these from their immediately prior years of study, thus giving him space for fuller and more complete attention to those subjects which might seem commonplace but which are really of supreme practical importance. The book is one of the most valuable, within its sphere, that has come to our notice.

A MANUAL OF PATHOLOGY. By Guthrie McConnell, M. D., Professor of Pathology and Bacteriology, Temple University, Medical Department, Philadelphia. Second revised edition; 12mo of 531 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Flexible leather, \$2.50 net.

This is essentially a practical working manual for students. Nevertheless, physicians in active practice will find it a mighty handy book to have lying in a convenient place. While all theorizing and speculation has been avoided, the work is fully up to date. The section

upon tumors is remarkably clear and concise, Adami's classification being adopted. The section upon malaria is another lucid exposition of a subject and the text is aided by one of the most comprehensive diagrams we have seen. The book is gotten out in a style pleasing to the eye and at the same time very durable so as to withstand hard usage in the laboratory or autopsy room.

CLINICAL DIAGNOSIS. A Manual of Laboratory Methods. By James Campbell Todd, M. D., Professor of Pathology, University of Colorado. Second edition, revised and enlarged; 12mo of 469 pages with 164 text illustrations and 13 colored plates. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$2.25 net.

The second edition of Prof. Todd's book more than maintains the high standard set by the original. It is exactly what the author claims, a manual of the laboratory side of diagnosis to aid the practitioner and student of medicine, and thoroughly well has the work been done. One is impressed by the completeness of compilation. No matter what the subject, wherever the laboratory has come to the aid of the clinical worker, one has only to turn to it to find the latest method, the clearest technic, described in concise language and aided by some of the best pictures we have seen in works of this character.

The book is of convenient size and is one of which it can be honestly said that it should be in the hands of every senior student and every practitioner who aims to keep thoroughly up to date upon the most important of all subjects, diagnosis.

THE TAYLOR POCKET CASE RECORD. By J. J. Taylor, M. D. Published by the Medical Council Company, 42d and Chestnut streets, Philadelphia, Pa. Price, \$1.00.

The object of this book is to encourage more accurate observation and study of cases by supplying a convenient form for a condensed record of each important case, in pocket size, so that the practitioner can have it always with him, and so arranged that the necessary data can be written down in the briefest possible time—preferably while the examination is actually being made.

Thoroughness of examination is encouraged by means of a Syllabus, detailing all the points that should be considered in each case.

The blank for the first thorough examination diagnosis and treatment is followed by spaces for sixteen subsequent visits.

The book provides for 120 cases.

BLAIR'S POCKET THERAPEUTICS. A Practitioner's Handbook of Medical Treatment. By Thos. S. Blair, M. D., Neurologist, Harrisburg (Pa.) Hospital; Author of "A Practitioner's Handbook of Materia Medica," and of "Public Hygiene," "Member American Medical Association, etc. Published by the Medical Council Company, 42d and Chestnut streets, Philadelphia, Pa. Price, \$2.

The physician very frequently needs, for instant reference, a book which gives the best methods of treatment in any given case. Many books have been offered for this purpose, but they consisted only of collections of miscellaneous prescriptions and formulas, totally unrelated to each other, with no rules or reasons to guide in their use, and almost useless to the physician with any independence of thought or scientific bent of mind.

This book gives a condensed intelligent discussion of the best methods of treatment, based on scientific principles, with a well-trying, reliable formula occasionally to illustrate the application of the principles. The author gives many modes of treatment far in advance of the present text-books. An ingenious method of indicating relative dosage is to print the name of the drug in capital letters for large doses, in ordinary type for medium doses, and in italics for small doses. An exhaustive "Table of Large, Medium and Small Doses," is given in the book.

The diseases treated are divided into related groups, each group occupying a chapter (a copious alphabetical index provides for instant reference to any particular disease).

The appendix gives very many necessary tables for quick reference, followed by an exhaustive table of doses, closing with a general index.

In order to get all this within the compass of a book for the pocket, a very thin, tough Bible paper has been used, so that it is really a much larger book than it looks.

This book will be a useful pocket companion to the physician in his daily work.

News Items

Wanted.—Microscope for general work. State condition and price. Address L 22, care of Chicago Medical Recorder, 804 Pullman building.

For Rent.—Hours in 1017 and 1018 Venetian building. Dr. John E. Owens.

For Rent.—We have now desirable space or hours in physicians' new suite. Moderate rent. Telephone Central 5745.

For Rent.—Hours from 3 to 6 in a completely furnished suite. Office consists of two rooms, both connecting with waiting room and private exit. Rental includes use of waiting room, telephone, light and services of attendant. (Inquire Room 1007 Columbus Memorial building.)

To Rent.—Afternoon hours in a fully equipped office. Light and cheerful. Telephone and services of attendant included. Very reasonable. Apply to Dr. H. L. Pollock, Suite 1124 Republic building, State and Adams streets.

To Rent.—May 1st. Large room with small second room, completely furnished; connected with reception room and private exit. Low rent. Hours, morning to 1 p. m., and after 4:30 p. m. Address Dr. J. C. Friedman, 1305 Heyworth building, 29 East Madison street.

Dr. Folkes Again in Charge at Biloxi.—Friends of Dr. H. M. Folkes will be interested to know that he is again personally conducting the well known Gulf Coast health resort. The sanatorium has been thoroughly renovated in every respect and, as before, will be run on a high grade ethical plane. No mental, tubercular, alcoholic patients or drug addicts are received. Physicians referring patients to Dr. Folkes may depend on their receiving the very best of care and attention.

New Edition of Saunders' Catalogue.—W. B. Saunders Company have just issued a new (16th) edition of their illustrated catalogue, which describes some forty new books and new editions published by them since the issuance of the former edition.

The books listed in this catalogue cover every subject of interest to the medical man. The descriptions and illustrations are such as to enable the reader to select easily just the book he wishes on any branch. It is really an index to correct medical literature—an index by which the practitioner, the surgeon, and the specialist can acquaint himself with what is new in the literature of his subject.

This edition also contains an illustration and description of Saunders' new building, now being erected on Washington square, Philadelphia's new publishing center.

Any physician wishing a copy of this handsome catalogue can obtain one free by addressing W. B. Saunders Company, 925 Walnut street, Philadelphia.

New Building for Oconomowoc Health Resort.—The management of the Oconomowoc Health Resort desires to announce the opening of a new building. The construction is the same as the main building, absolutely fireproof. The new part comprises 25 guest rooms and a gymnasium. Eight rooms with special baths, and private porches have been isolated for the care of acute mental cases. At present the plant offers to the profession a most complete and modern equipment for the treatment of nervous and mental diseases.—Arthur W. Rogers, M. D., physician in charge, residing in the building.

Public Health and Marine Hospital Service Examination.—A board of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine Hospital Service, 3 B street, S. E., Washington, D. C., Monday, April 8, 1912, at 10 o'clock a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine Hospital Service.

Candidates must be between 22 and 30 years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character.

The following is the usual order of the examinations: 1, Physical; 2, oral; 3, written; 4, clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate.

The examinations are chiefly in writing and begin with a short autobiography of the candidate. The remainder of the written exercise consists in examination of the various branches of medicine, surgery and hygiene.

The oral examination includes subjects of preliminary education, history, literature and natural sciences.

The clinical examination is conducted at a hospital and when practicable, candidates are required to perform surgical operations on a cadaver.

Successful candidates will be numbered according to their attainments on examination and will be commissioned in the same order as vacancies occur.

Upon appointment the young officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon.

Promotion to the grade of surgeon is made according to seniority and after due examination, as vacancies occur in that grade.

Assistant surgeons receive \$1,600, passed assistant surgeons \$2,000, and surgeons \$2,500 a year. When quarters are not provided commutation at the rate of \$30, \$40 and \$50 a month, according to grade, is allowed.

All grades above that of assistant surgeon receive longevity pay, 10 per cent in addition to the regular salary for every five years' service up to 40 per cent after twenty years' service.

The tenure of office is permanent. Officers traveling under orders are allowed actual expenses.

For further information, or for invitation to appear before the board of examiners, address "Surgeon-General, Public Health and Marine Hospital Service, Washington, D. C."

Ninth International Red Cross Conference.—The American Red Cross desires again to invite attention to the exhibition in connection with the Ninth International Red Cross Conference, which will be held in Washington, D. C., from May 7 to 17, 1912.

The exhibition will be divided into two sections, which will be styled Marie Feodorovna and General. The former is a prize competition, with prizes aggregating 18,000 rubles, or approximately \$9,000, divided into nine prizes, one of 6,000 rubles, approximately \$3,000; two of 3,000 rubles each and six of 1,000 rubles each.

The subjects of this competition are as follows:

1. A scheme for the removal of wounded from the battlefield with the minimum number of stretcher bearers.
2. Portable (surgeons') washstands, for use in the field.
3. The best method of packing dressing for use at first aid and dressing stations.
4. Wheeled stretchers.
5. Transport stretchers on mule back.
6. Easily folding portable stretchers.
7. Transport of the wounded between warships and hospital ships, and the coast.
8. The best method of heating railway cars by a system independent of steam from the locomotive.
9. The best model of portable Roentgen apparatus, permitting utilization of X-rays on the battlefield and at first aid stations.

The maximum prize will be awarded to the best exhibit, irrespective of the subject, and so on.

The General Exhibit is again divided into two parts; the first will be an exhibition by the various Red Cross Associations of the world. The second will be devoted to exhibits by individuals or business houses of any articles having to do with the amelioration of the sufferings of sick and wounded in war, which are not covered by the Marie Feodorovna Prize Competition for the year. While the American Red Cross will be glad to have any articles pertaining to medical and surgical practice in the field, it is especially anxious to secure a full exhibit relating to preventive measures in campaigns. Such articles will be classified as follows:

1. Apparatus for furnishing good water in the field.
2. Field apparatus for the disposal of wastes.
3. Shelter such as portable huts, tents and the like, for hospital purposes.
4. Transport apparatus (to prevent the suffering of sick and wounded) exclusive of such apparatus as specified for the Marie Feodorovna Prize Competition.

As with the Marie Feodorovna Prize Competition, for this country only articles having the approval of the Central Committee of the American Red Cross will be accepted.

Diplomas will be awarded for exhibits in this section of the exhibition as approved and recommended by the jury.

Further information may be obtained from the Chairman, Exhibition Committee, American Red Cross, Washington, D. C.

It is perhaps apparatus having to do with prevention of disease in armies that the energies of Americans have been specially directed since the Spanish-American war. Therefore, the last mentioned section of the exhibition should make an appeal to them.

Cholera Epidemic Averted.—That the country scarcely knows of the imminent danger of an epidemic of cholera that threatened this country last summer, so quietly was the work of prevention of the United States Public Health and Marine Hospital Service carried on, was the declaration of Assistant Surgeon General J. W. Kerr at a public health conference in Baltimore. Bacteriological examination of steerage passengers from infected ports resulted in the discovery of thirty-five persons afflicted with cholera and twenty-seven cholera bacillus carriers. "Had they not been discovered," said Dr. Kerr, "they would in all probability have established foci of infection and thus have given rise to a serious epidemic."

New York Town Begins War on Rats.—A movement has been inaugurated in a small town in New York that promises to become state-wide. It is the first rat club to be organized in that state, the members of the society pledging themselves to the extermination of the rodent. For some time the vicinity has been overrun with rats that have done much damage to farmers and storekeepers alike. Modern devices have proved ineffectual, and finally the rat club was formed. The dues are used to pay a bounty of 3 cents for each rat tail delivered to the treasurer.

The plan has been found to work exceedingly well. Already many rat tails have been redeemed, and the small boys are reaping a financial harvest. Other towns in this section are forming rat clubs.

Sky-Scrapers Mean Loss of Sunshine.—"High buildings and less sunshine" is the text of a hygienic sermon in the last of the Bulletins of Sanitary Science of Seattle. The matter has been the occasion of a good deal of discussion on the West Coast, the Washington State Chapter of Architects having it in mind to petition the city council to establish a reasonable height of buildings. "Tall structures destroy, to a very great extent," writes Dr. J. E. Crichton, "the proper light which should be enjoyed by the occupants of other structures." They induce severe air currents which are a direct and positive annoyance to those in the vicinity. One of the matters in which they are very directly concerned is the stirring up of street dust with whatever of filth, abrasive or germ it may contain, while the shutting off of sunlight makes of street mud an excellent ground for bacterial growth. There are a good many reasons why tall buildings may be prejudicial to the public health, leaving out of the question the consequences of the accompanying massing

of humanity in crowded conveyances morning and evening, increased difficulty of proper care of street or building and the economic consequences of such congestion in extraordinary values within a limited area, and lack of such values elsewhere.

Florida Up-to-Date in Sanitation.—"Progress of Florida in Sanitation" is the title of an address of the last year by Dr. Hiram Byrd which sets forth in an interesting way the work that has been done in this southern state in combating the great number of tropical diseases that have become homed there during the time that their nature and the kind of weapons to employ against them were little understood. One point that is of interest yet little appreciated is the size of Florida. It is half as large as the British Isles, one and one-half times as large as Cuba, it has enough seacoast to reach from Jacksonville to Boston, and he who starts from Key West to New York covers a third of the distance and half the time before he crosses the state line.

Florida has a strategic health position. It is only six hours from Havana, which for a century and a half was the endemic center for yellow fever for the world. This dread disease was introduced into a single Florida port city fifteen times in twenty-five years. "No wonder," writes Dr. Byrd, "capital was slow to invest and the tide of immigration loath to turn this way."

Discoveries in the methods of transmission of disease came rapidly once the fundamental principles were suggested. In 1892 Theobald Smith and Kilbourne fastened on a tick the responsibility as intermediate carrier of the germ of Texas fever among cattle. This was the first time that it was known to the world that a disease may be insect-borne. Six years later it was discovered by Ross that malaria is transmitted by mosquitoes. In 1900 the discovery was made by Walter Reed of the United States Army, that yellow fever also is mosquito borne. This ushered in a new era of sanitation. The last decade has been one of unprecedented importance to public health circles, and it has become known that some of the most veritable scourges to humanity are preventable. Dr. Byrd gives much credit to the modern sanitation of Cuba, praising the management that now makes it the great bulwark between this country and the tropics, which Florida, itself was a few years ago.

"And while all this was going on in the greater world Florida was keeping pace in the smaller. Not that she has made any great discovery in scientific medicine; that is beyond her scope. It is the function of the nation to conduct great original researches, while it is the function of the state to put into practice what is learned." Florida had its opportunity to prove the quality of prevention against yellow fever, the first such opportunity on the soil of the country. The system of the quarantine against disease in that state is that it is in the hands of the State Board of Health alone. In every other state the declaration of quarantine is in the hands of the local officers, who exercise it according to their own will.

"The wisdom of the Florida policy," continues Dr. Byrd, "was

demonstrated in 1905, when yellow fever was stopped at Pensacola and the infection prevented from reaching a single other point within or without the state." Some of the other states suffered at the same time to the extent of a score or more of counties in each affected.

Another thing that Florida has done and in which it was a leader is the ceding of the local marine quarantine to the government. In this matter it has been pretty well followed, for now comparatively few ports are not cared for by the government officials. The principle ought to be a good one in that it will insure a uniformity of action and application at the same time of the best and most recent information. The sole objection arises from the possibility of bureaucratic methods which are not unknown in large departments even of a government like that of this country.

Florida was the first of the states to take up an active campaign against the hookworm, and with the minor scientific advances of the world it has kept apace. And for all this Dr. Byrd places the credit largely with one man, his superior, Dr. Joseph Y. Porter, head of the Florida Board of Health.

Cash Loss from Typhoid Fever.—Dr. Newsholme, the eminent English vital statistician and expert in health matters, in the report of last year to the local Government Board, makes an interesting calculation with reference to the financial advantages of the lessened typhoid fever rate. The actual number of deaths in England and Wales in 1910 was only 1,848. If the rate had been the same in the year as during the years 1871-80 the number of deaths would have been ten thousand greater, which lives are saved to the nation, which has also the benefit of full work from the 70,000 who would have had the disease and recovered, but at the cost of weeks of protracted and disabling illness. Dr. Newsholme computes the saving which prevention has made to the nation at about fifteen million dollars in the year. The same authority calls attention to the need of prevention in measles, for, while there appears to be a decrease in the quantity, there is an increase in the mortality of about six per cent. "Clearly there is much to be done in the prevention of measles," he writes, noting at the same time that there has been an important decrease in whooping cough. There was last year a wave of measles in England, and, as has already been noted in this department, it is a run not confined to England. Boston exhibited an increase in the disease, and the suggestions are that the present year is to be a "measles year," in which an increase in the disease is not unlooked for.

Number of Insane in Institutions in the United States.—A special census of 372 institutions for the care of the insane was taken by the United States Census Bureau in 1910, and the number of insane persons in the institutions on January 1 of that year was found to be 187,454. The number admitted during 1910 was 60,603 and the number discharged was 53,880. A special census taken in 1904 showed the number in institutions to be 150,151 and the number of persons committed during that year was 49,622. In the six years from 1904 to 1910 there was an increase of 37,303, or 24.8 per cent of the patients

confined, and an increase of 10,981, or 22.1 per cent of the number annually committed to such asylums. The number of insane in asylums per one hundred thousand of population in 1904 was 186.2; in 1910 it was 203.8. The annual commitments per one hundred thousand of population increased from 61.5 in 1904 to 65.9 in 1910, showing an increase of 4.4 in 1910. This, of course, includes only those committed to hospitals; and the increase may be due to an extension of this method of care for the insane and also to the increase in the number of institutions, which amounted to 13 per cent. Massachusetts had the largest number of insane patients in institutions on Jan. 1, 1910, amounting to 344.6 per one hundred thousand of population, while New York had 343.1 per one hundred thousand of population. These states are probably better provided with institutions than most other states and besides have patients from other states. The District of Columbia exceeds both of these states in the number of patients in institutions, for the District contains the government hospital, which draws patients from a much wider area than any of the states. The number of the insane in hospitals for the insane in the states south and west is much less than in the east. In the states west of the Mississippi River, owing to rapid increase in population largely from the eastern states, the number of insane is less because the population represents a class in which insanity is less prevalent; also provision for the care of insane in these states probably has not kept pace with the increase in population.

Dear Doctor:—We again wish to call your attention to the advantages and facilities offered by the North Shore Health Resort for the care of such of your patients as need sanitarium treatment.

Those of your patients who are convalescing from a long illness or after operations will find this to be an ideal place for rest, good care, good food and the attention necessary to hasten complete recovery.

Our institution offers exceptional advantages for: (a) Systematic outdoor life; (b) standard normal and special diet; (c) exercise and rest; (d) massage and medicated baths; (e) Nauheim baths and Schott exercises; (f) sun and air bath; (g) steam, vapor, electric, cabinet and water baths; (h) electricity—static, galvanic and faradic; (i) hydrotherapy in all its forms.

We might also add that during the past year we have made many extensive improvements throughout the institution; the bath and treatment rooms have been thoroughly remodeled, many new appliances have been installed, and we are now in a better position to take care of your patients than at any time since the institution has been in existence.

It is understood that your patients will be treated under your personal supervision if so desired and a report made to you at stated intervals.

You are cordially invited to visit and inspect our institution at any time.

Yours truly,
NORTH SHORE HEALTH RESORT,
W. P. Forkin, Medical Director.

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Original Articles.

SANITARY CONDITIONS IN THE PHILIPPINES ON AMERICAN OCCUPANCY AND WORK OF THE BOARD OF HEALTH.*

By COLONEL L. MERVIN MAUS,
Chief Surgeon, Medical Corps, U. S. Army, First Commissioner Public
Health for the Philippine Islands.

Had it not been for the skill and dauntless courage of that wonderful navigator, Fernando Magellan, Spain would never have acquired the Philippine Islands by the right of discovery, nor the United States by the might of conquest.

Before discussing sanitary conditions and diseases, we will hastily glance over the population, the sociology, and the physical and climatic conditions of our new possessions in the Far East.

The Philippines consist of about 3,000 islands, with a total area of 120,000 square miles. Twelve of the islands range from 1,250 to 50,000 square miles each. Three hundred and fifty, from 1 to 1,000 square miles each, and the remainder less than one square mile. Luzon, the largest island, is the size of New York, Mindanao of Ohio and Samar of Connecticut. The entire area of the archipelago is as large as all of Great Britain.

Volcanic in origin, all of the islands are mountainous or hilly, with valleys and plains. The land is rich and fertile, and where not under cultivation is covered with heavy forests or dense tropical vegetation.

As the islands lie within the tropics, the climate is entirely tropical, the thermometer rarely going below 60 degrees or above 98 Fahrenheit on the low lands. The temperature in the mountain

*Address delivered before the Physicians' Club at the Sherman Hotel, March 8, 1912.

regions, and especially on the plains of Benguet, is cool and bracing, both in winter and summer, although it never reaches the freezing point.

The seasons are divided into, the wet, cool and temperate, and the dry and hot. The wet season lasts from June to December, cool and temperate until the middle of March, and the hot and dry until the beginning of the rainy season. The first two seasons are comfortable and healthy, while the dry and hot season is very disagreeable and trying to the unacclimatized.

With the exception of the negritos, the native population belong to the Malayan race, or the oceanic Mongols, and number about 7,000,000. Besides the Negritos and pure natives, there are 500,000 mestizos, or mixed breeds, 50,000 Chinese and Japanese, and 30,000 foreigners, including the army and navy on duty in the archipelago. Among the natives are 700,000 classed among the wild tribes, among which are included the Moros. The Negritos, who are regarded as the aborigines of the islands, number at present about 23,000.

The natives, both civilized and wild, are divided into various tribes speaking in many instances an entirely different language or dialect. There are about eighty-seven such tribes, the principal ones being the Tagalogs, Visayans, Bikols and Ilocanos, while the principal wild tribes are the Moros, Igorots, Headhunters, Bogobos and Tagbanuas.

Before American occupation few of the masses could read and write, education as a rule being confined to the wealthy natives and mestizos. Outside of these two classes it is doubtful whether two per centum of the masses could read or write. Since American intervention public schools have been organized with a daily attendance of 600,000 pupils.

His dwelling consists of a simple cane and nipa hut, elevated stilt-like from eight to ten feet above the ground. Rice and fish form the staples of his diet, and his wardrobe consists of a straw hat, cotton shirt and trousers. As a rule, both women and men go barefoot.

The drinking water throughout the islands, especially in the small towns and rural districts, is obtained from infected surface wells, within a few feet of the kitchen door, while the excrement and garbage are thrown into the back yard, to be disposed of by the house scavenger, the family hog.

Little or no attention was paid to sanitation by the Spanish au-

thorities, and the sanitary condition of Manila, at the date of the American invasion, resembled that of European cities in the sixteenth century. Health matters up to that time were administered by a third-class official, whose principal duties were confined to looking after the municipal physicians and collecting fees for death certificates.



Tree House of the Gaddanes, Near Ilagan, Isabela Province, Luzon.

Before discussing the sanitary problems encountered by the Philippine Board of Health after its organization, we will briefly consider the hardships and insanitary conditions experienced by our troops from the summer of 1898, until the close of the insurrection in July, 1901.

It will be remembered that an armistice existed between the

American and Filipino troops after the capture of Manila in August, 1898, until February, 1899. Satisfied at this time that the Americans intended to retain control of the Philippines, Aguinaldo started an insurrection, which required an army of 80,000 men and two years to suppress.

Very little was accomplished during this period in the way of permanent sanitary or sociological improvement among the islanders, for the army was kept busy in hiking, guarding small towns in the provinces, and looking after its own health and welfare. It can readily be imagined that continuous field service during the rainy season of 1899 entailed great hardship on the men, most of whom were raw levies and knew nothing of campaigning or camp life.

During this period the army was scattered throughout Luzon and the southern islands, and when not engaged in field work was quartered in nipa huts, dilapidated convents or other unsuitable buildings.

The sanitary condition of the pueblos was usually wretched, and life in them dreary and almost unendurable. The rations also were poor and lacked fresh meat and vegetables; the drinking water, which was boiled in caldrons over open fires to prevent tropical dysentery, was insipid, smoky and iceless, while the wretched quarters of the men were unscreened against mosquitoes.

Almost continuously for two years the troops were hiking through the rice paddies and swampy lands of Luzon, or the mountain fastnesses of Samar, undergoing extreme hardships and sleeping oftener than otherwise in wet clothing. It was no wonder, under such circumstances, that many of the regiments suffered a constantly sick rate of 25 per cent or more, and contracted amoebic dysentery, malarial poisoning, tuberculosis and other constitutional diseases which necessitated the transfer of many of their members to the homeland as permanent invalids.

The insurrection was officially ended in July, 1901, by an order from Washington, although the islands were far from pacified. At its conclusion, July 5, 1901, civil government superseded military control, with Wm. H. Taft as the first governor of the islands.

Manila, the capital of the Philippines and seat of the civil government, dates back many centuries before the Spanish conquest. When Legaspi sailed into the Bay of Manila in 1571 he found a small Mahommedan village at the mouth of the Pasig, which in the course of more than three centuries has grown into a city of 300,000 inhabitants. Located at the estuary of the Pasig with

Manila Bay, the site consisted of a low and level tract, partly covered with mangrove swamps and deposits of silt.

As the city grew and spread the grounds became more or less filled in with domiciliary filth or sand taken from the Pasig River, and has been gradually raised from three to ten feet. Like Venice, Manila is intersected by thirty or more esteros or canals, which are



Milk Venders, Old Style.

used as commercial waterways, and also for sewers, drains and irrigating ditches.

These canals ebb and flow with the tide, and are usually filled with dirty and malodorous water, and cascos, which serve as the habitation of the boatmen class. Besides the esteros within city limits, there are many large sunken or marshy tracts of lands, which

alternately become flooded and uncovered by foul estero water, through the action of the tides, and are not only insanitary, but become breeding places for mosquitoes.

The city contains about 40,000 houses, 10,000 of which are built of stone or lumber, the remainder of bamboo, which stilt-like stand from six to ten feet above the ground and covered with nipa roofs. Generally speaking, the houses built of masonry consist of sandstone or a manufactured stone, which is laid on the ground without foundation. As a result of this method of construction the lower story is water-soaked from six to eight feet above the ground, varying in distance according to dryness of site.

Nearly all of the stone buildings of Manila were constructed many years ago, and until recently provided with stone vaults or cesspools instead of water closets. With the exception of a few private sewers emptying into the Pasig River or esteros, and the cesspools, or "posos negros," the night soil was thrown into the back yard to desiccate or to be disposed of by the family hog.

A conservancy pail system for the entire city was installed in 1901, and the collection of fecal matter was dumped into the Bay of Manila, several miles from shore. Public latrines with pails were located throughout the nipa portion of the city for use of the poor.

The sewer system, costing \$3,000,000, was begun in Manila in 1906 and completed in 1909. Owing to the flatness of the site of Manila it became necessary to install pumping stations.

The population of Manila consists of a heterogeneous mass, principally Filipinos, Chinese, Mestizos, Americans and foreigners. The Filipinos number about 220,000, Chinese 40,000, Americans, including garrison, 10,000, foreigners and other orientals 5,000.

The Board of Health for the Philippine Islands was organized by Act 157 of the Philippine Commission, and became effective July 5, 1901. It was my fortune to serve as the first commissioner of public health in the Philippines, and to assist in laying the foundation of a health department, which has practically revolutionized the sanitation in the islands.

It would be impossible within the time allotted me to give more than a brief detail of the insanitary conditions found on American occupancy, and the work accomplished by the Board of Health, since its organization in 1901. In addition to the public health of the archipelago, and diseases of animals, the insular board served as the local board of health for Manila.

As a result of the insurrection in 1901 the city of Manila was

crowded to its utmost with provincial refugees, who lived in wretched nipa huts and hovels on the most meagre food. With sanitation in its most primitive form, smallpox, bubonic plague and other infectious diseases prevalent, the annual death rate ran as high as 80 per 1,000.

Many urgent problems presented themselves to the board on its organization, among which were health ordinances for Manila and sanitary and medical laws for the archipelago. Besides a satisfactory set of health ordinances for Manila, which was enacted as laws by the municipal government, the principal medical and sanitary



First Board of Health for the Philippine Islands, 1901-1902.

laws of the archipelago were passed, or were sent to the commission during 1901 and 1902, among which may be mentioned laws for the practice of medicine, dentistry, pharmacy, veterinary, and for the control of leprosy and smallpox.

The laws pertaining to medicine and the allied professions stand as models today, and it was due to the rapidity of their enactment that the flood of quacks and impostors were kept from the islands, and the ignorant and poverty-stricken natives saved from their pernicious and merciless importunities.

Bubonic plague, smallpox, leprosy and later Asiatic cholera,

were among the urgent health problems the board had to deal with from its organization. Bubonic plague had been in evidence in Manila since December, 1899, and had exacted a toll of 199 lives out of a total of 271 recorded cases during the year 1900. From January 1st to June 30, 1901, when I assumed charge of the board, 400 cases had occurred, with 241 deaths.

The campaign organized against the rats of Manila by the board demonstrated the truth of the theory that infected rat fleas were the hosts and carriers of the infection. In order to carry out the campaign on a proper scale it became necessary to cable to Hong Kong, Europe and the United States for traps, arsenic and the necessary material.

A corps of 200 natives was enlisted for the work, and divided among the twelve barrios or districts of the city. Rat traps and rat bane were placed throughout the city in every house, hut and yard, and an ordinance was enacted with penalty attached for the punishment of any one hindering or disturbing the work.

A kitchen was established for the preparation of rat bane, and a corps of microscopists detailed for examination of the rats caught or found. An ordinance was also passed giving the board authority to close for disinfection repair or remodeling any house in which a case of plague was discovered or an infected rat found.

The work of rat destruction began about September 1st, and was continued faithfully for six months. Fifteen thousand rat traps and from 30,000 to 40,000 plates of rat bane were set each night. We were never able to learn the number of rats destroyed during the campaign since the majority poisoned escaped to the esteros or Pasig River for water, and were swept away by the current.

A low estimate places the number killed by rat bane at 800,000, and those caught or found dead at 60,000. Over 30,000 were sent to the laboratory for microscopical examination, 3 per cent of which at first were found infected. As the disease among the rats disappeared it likewise declined among the natives. About one-tenth of 1 per cent of infected rats were found in the following March, after which it disappeared both among the natives and the rodents.

During the month of July, 1901, 39 cases of plague appeared in Manila, in August 34, September 8 (first month of rat crusade), October 8, November 0, December 2, and with the exception of one case in February, 1902, and two in March, the disease entirely disappeared from Manila during the remainder of the year. Since that date a few cases have occurred in Manila, which have been attributed to re-infection from China.

Besides the campaign against rats the board caused the disinfection, repair or remodeling of 2,000 of the old stone houses which were regarded as infected. In many of these houses cement floors were laid, rat runs closed and doors and windows installed.

In the preparation of rat bane, rusty bacon with 60 per cent of arsenious acid was found the most efficient and acceptable to the rats, although cheese, boiled rice and other foodstuffs with arsenic were used. I believe the campaign organized for the elimination of plague in Manila, during the fall and winter of 1901 and 1902, the most successful in the history of plague epidemics.

Smallpox has always been a scourge in Spanish colonies, and one of the principal causes of mortality. From casual observation of the pit-marked faces one encountered in Cuba, Porto Rico and the Philippines in 1898, one was forced to believe that life in those islands was reduced to a "survival of the fittest," the determining factor being smallpox.

The natives were fatalists and had little fear of this most loathsome and malignant disease; in fact, rather invited its visitation by entering boldly into the homes of those infected with babes in arms and accompanied by their little children.

Smallpox was very common in the Philippines on the arrival of our troops, and one of the most troublesome health problems we had to contend against. From twenty-five to thirty deaths occurred daily among the natives in Manila and not infrequently deaths from that cause among our troops. Few of the natives were protected against the disease, and no precautions were observed among them to prevent its spread.

A coffin, provided with litter handles, was kept in every village church for the conveyance of the dead to the Campo Santo, and used regardless of the cause of death. No quarantine was imposed against the homes of those affected with any infectious diseases, nor were social visits discontinued. The fighting, drinking Anglo-Saxon possesses the same traits the world over, hence few of our young soldiers hesitated to enter Filipino homes when swayed by passion regardless of diseases, conditions or consequences.

During my service as chief surgeon of General McArthur's division in 1899, the daily sick report from that disease averaged from 25 to 30 cases. While such a contingency seems impossible in a protected army, it simply shows the carelessness with which the vaccinations were carried out.

Partly to protect the men and partly the natives, I was author-

ized by the division commander to vaccinate all of the provinces of Northern Luzon, in which our command was stationed. Glycerinated virus in 100 unit tubes was received from Manila, and with the assistance of native vaccinators, under the direction of the army surgeons, 600,000 of the natives were vaccinated north of Manila.

The work was rapidly pushed during the early spring months, and completed about the first of May, at which date the disease had not only disappeared among the troops, but from the population of that portion of the island. Systematic vaccination under military direction was likewise carried out in many sections of the archipelago with the happiest results.

During my administration as commissioner of public health for the islands, a general law with penalties attached was passed, making public vaccination compulsory. The work of vaccination was carried out systematically under the direction of the provincial or district health officers, and reports submitted to the Central Bureau of Health in Manila.

I have been reliably informed that over 3,000,000 successful vaccinations against smallpox have been recorded since the passage of the act, and that the disease has practically been eliminated from the islands.

Before concluding my remarks on this subject, it will be of interest to learn that in 1812, a statue was erected in the plaza of the Ayuntamiento, Manila, by the citizens of that city, to King Carlos the Fourth, for the interest he displayed in protecting the natives against that fatal and deforming disease. As a means of furnishing vaccine virus to this far away colony in the Orient, he ordered that a ship be sent from Acapulco, Mexico, with a number of young heifers, one of which was vaccinated before departure.

On arrival in the Philippines the inoculated heifers were sent to the distant pueblos of the islands, and the people vaccinated directly from them. This system was kept up in a desultory way until 1888, when a vaccine farm was established in Manila, and young caraboa heifers used instead of domestic cattle.

Until the establishment of the Bureau of Science in Manila, glycerinated vaccine virus was furnished from the vaccine farm established by the Board of Health and shipped to its destination on ice to prevent deterioration en route.

When we consider the magnificent results obtained in smallpox in Cuba, Porto Rico and the Philippine Islands through the beneficence of vaccination, it seems incomprehensible that any properly

educated and intelligent American citizen could inveigh against its practice.

Possibly no section of the world offered better opportunity for the study of diseases and pathological conditions than the Philippine Islands, when Dewey's guns announced the termination of Spanish misrule in the far East. With the possible exception of scarlet fever, I can think of no disease common to the United States, not found there, besides a host of unknown tropical diseases common to both man and beast.

Leprosy, which is so common in the islands, is said to have been transported to the Philippines in 1600 by Ieyasu, that famous old Tokugawa Shogun, who played such an important role in the persecution of Roman Catholicism at that time.

It will be remembered that Ieyasu issued an edict against Christianity at the beginning of the seventeenth century, and not only expelled all of the Catholic friars, but put to death every native convert who did not recant. Ieyasu was fearful lest the Spanish friars might attempt the control of his government, as they had done in the Philippines.

In extenuation of their presence in Japan the holy fathers informed the Shogun that they came only for the purpose of caring for the sick and unfortunates. The grim old Shogun informed the friars that he would not deprive them of their holy mission, so sent back with them a ship load of lepers to the Philippines.

During frequent inspections among the pueblos of Northern Luzon in 1899-1900, I was struck with the number of lepers living at large and without restraint among the populace. Indeed, some of them were the prominent citizens of the communities, occupying positions of trust, such as village presidents, councillors, etc. No restriction whatever was enjoined against social intercourse with the nonleprous community, such as attendance at church, social functions or schools, should such anomalies exist in the community.

Upon my presentation of the situation to General McArthur, who had command of that portion of Luzon, I was directed to secure a suitable island for their colonization. Before we were able to carry out this plan I was appointed president of a board for the selection of a suitable island for the lepers of the entire archipelago. After making three extensive voyages to the outlying islands, Culion was selected and is now occupied by 2,600 or 2,700 lepers.

Under the auspices of the Board of Health during my administration a census of the lepers was begun, which revealed the presence

of about 4,000 lepers in the archipelago. Information as to the number suffering from the disease was vague and indefinite during the Spanish administration, and even the friars, who had charge of San Lazaro and two other leprosy hospitals, knew nothing of their number.

During a visit to Cebu in 1900, in the interests of the lepers, I called a meeting of the friars, which was presided over by the bishop. At that meeting I was informed that the islands contained from 25,000 to 50,000 lepers, the latter being the guess of the bishop.

An act was passed by the Civil Commission for the segregation



Physician Under Board of Health Inoculating Chinese in Shop Where a Case of Plague Occurred.

of the lepers of the islands, with penalty attached against any one who concealed or refused to report the presence of any one affected.

Culion lies among the Palawan group, several hundred miles west of the main body of islands, and contains about 450 square miles. The island contains mountains, valleys and fresh water streams, and perhaps the finest harbor in the archipelago. The government has spent several hundred thousand dollars there in suitable buildings, churches, schools and places of amusement.

While the colony is under the administration of an American, Dr. Clements, the lepers are allowed to control themselves as far

as their local government is concerned. So far no treatment for the cure of the disease has proven satisfactory, and the annual mortality rate amounts to about 200 per 1,000. Several years ago hopes were entertained that the X-ray might prove curative. Since then Chaulmugra oil is being tried. The tubercular form of the disease is the most common variety in the islands.

When Asiatic cholera visited the Philippines in 1884, it is said that as many as 3,000 deaths occurred in Manila in one day, and hence the news of its return in 1902 was met with the gravest anxiety and misgivings. Should my memories of the Philippine Islands fade one by one, I feel quite sure that my experiences with cholera over there would be the last to leave.

Uneducated, ignorant and superstitious to a degree, after three and a half centuries of Spanish domination, the Filipinos regarded the visitation of cholera, plague and smallpox as penances sent by the Almighty for religious derelictions. They believed that the heretical Americans in charge of health matters were not only agents of the Evil One, but imposing the harsh measures of quarantine out of revenge.

A certain class of the Spanish physicians and friars even went so far as to deny the existence of cholera. Whether it was because they were afraid of the measures prescribed by the board or because they did not believe the epidemic cholera, neither the people nor the native physicians co-operated with the health authorities. On the other hand they did everything possible to hamper the work of the board in the way of concealing cases, and even the bodies of those dying from the disease.

Rather than have their huts placarded with cholera, and subjected to disinfection and quarantine, they drove infected members of the family out into the street, and buried their dead under heaps of lumber, in the rice paddies, or threw them into the Pasig River.

I merely cite the above facts to show the difficulties of contending against a widely spread and malignant epidemic among a semi-civilized race.

Owing to stress of work I had returned to my office on the evening of March 20, 1902, and was on the point of going home, about twelve that night, when the telephone rang from San Juan de Dios hospital, announcing the presence of two suspicious cases resembling cholera. With the health inspector, who was present, I went at once to the hospital and found two natives practically moribund.

Microscopical examination of the dejecta was made at once and the comma bacillus found. Before the disease could be determined by the indol test, a dozen or more cases of cholera were discovered in the Farola district, where the first two cases had originated.

At this time cholera was prevalent in Canton and Hong Kong, and every precaution had been taken by the chief quarantine officer of the port, to prevent introduction of the infection. In spite of the closest surveillance, a cargo of cabbage and other fresh vegetables was shipped from Hong Kong into Manila Bay, where it was promptly thrown overboard by order of the quarantine officer.

It will be remembered that human excreta in China is collected in pails, diluted with water and sprayed over the growing vegetables every few days for fertilizing purposes. While the Board of Health was never able to definitely locate the cause of the infection, it was generally believed that some of the cabbage had washed ashore in the Farola district, or had been picked up and carried there. Of one fact the board was certain, namely, that the epidemic began in the Farola district, a narrow tongue of land extending down the right bank of the Pasig River to the bay.

Within ten days 102 cases occurred in the city, the majority of which originated in the Farola district. This district contained 300 or 400 poor fisher families who lived in wretched bamboo huts with nipa roofs. Trusting with the destruction of this focal center, the invasion of the disease might be abated the Farola colony was wiped off the map of the city with the assistance of the fire department.

Fortunately the Board of Health had completed, but a few weeks before, a number of buildings for the reception of bubonic plague contacts, so that the entire population of Farola district, about 2,000 in all, was transferred to the new buildings, and fed at the expense of the city.

It would be impossible to narrate all of the measures adopted by the board to suppress and stamp out the epidemic without greatly extending this paper. In order to protect the drinking water of the city a patrol of regular troops was ordered to guard the source of the water supply from the Mariquina River, fifteen miles away, and all of the wells throughout the city were closed.

Distilled water from the ice plant was issued free to everyone by the tank wagons of the city. Manila itself was quarantined against the country by means of a cardon of pickets, but in spite of this cholera cases escaped through the lines and carried the infection to the pueblos in the neighboring provinces and southern islands.

Rigid house to house inspections were made daily, bottling works closed, not using distilled water, and the sale of a large number of fruits, green vegetables and prepared food prohibited.

The city of Manila was divided into twelve districts and provided with a chief sanitary inspector, assistant sanitary inspector and enough ordinary inspectors to cover every house in their respective districts daily. Contact camps and cholera hospitals were organized in sufficient numbers to care for the members of all families in which the disease occurred, as well as the cases, which later were left in their homes under guard.

The division commander was called upon for assistance, and furnished the Board of Health thirty to forty medical officers, who were assigned as health officers in the city districts and infected pueblos of the provinces. The entire shipping of the esteros, Pasig River and Bay of Manila was placed under the control of the health authorities, as well as the railroad, which ran north to Dagupan, 125 miles distant. All infected houses were closed for a thorough disinfection, while the dead were cremated.

Many samples of food were taken from the markets and examined microscopically, as well as a number of flies caught in infected households. Cholera vibrios were found in several food samples and in some of the blue-bottle flies. These flies were bred along the banks of the esteros, which became a place of deposit for latrines, garbage and sewers.

After the disease had become general in the islands the army medical officers everywhere became local health officers and took charge of their respective pueblos and provinces.

The epidemic continued almost until April, 1904, during which time the official reports showed that 166,252 cases had occurred in the archipelago with 109,461 deaths, a rate of 65 per cent. Because the disease was not so prevalent as in other epidemics many persons were reluctant to admit its true nature, and probably the deaths of thousands of its victims were ascribed to other causes.

The record in Manila from March 20, 1902, until March 23, 1904, when the city was declared free from cholera by the Board of Health, was 5,581 cases with 4,386 deaths, a mortality rate of 78.5 per cent. The Filipinos were more susceptible to the disease and the death rate was greater among them than in the Chinese, American or other foreigners.

Cholera again made its appearance in Manila in August, 1905, and continued almost uninterruptedly until 1910. The disease trav-

eled from pueblo to pueblo and province to province, mowing down the natives by the thousands. While no definite statistics can be secured on the subject it is believed that over a half million people died from cholera since its appearance in 1902. It may be interesting to learn that neither immunizing, serum or other therapeusis had any apparent beneficial effects on the disease.

Great strides have been made in the general sanitation of the islands and sociological condition of the natives since American intervention in 1898. Through the beneficence of a public educational system, light has penetrated the remotest corners of the archi-



One of the Better Streets in Walled City.

pelago, even into the mountain regions of the benighted Negritos and savage Head Hunters.

Over 5,000 public schools have been established and are presided over by 9,000 American and native teachers. The daily enrollment of pupils approximate 700,000. English text books are used, and it is believed that within ten years English will be generally spoken throughout the islands. Besides primary schools, many industrial and normal schools have been established in many of the provincial provinces, in which the natives are prepared for useful trades, as well as for teachers.

The civil government has organized within Manila the Philippine Medical School, with a four years' course. Two classes have

already received diplomas from this institution, among which were two native women. Besides this, the government has erected a modern concrete hospital of 300 beds, a magnificent laboratory equipped for biological and other scientific work, and an asylum for the insane. Insanity is not common in the Philippines, and consequently little provision was made for this class of unfortunates under Spanish administration.

The sewer system recently installed in Manila is practically the only one in the Orient. Manila, the capital of the archipelago, has vastly improved in condition and appearance, and is now regarded as one of the cleanest and healthiest cities of the world. Naturally the death rate throughout the islands is high on account of tuberculosis, malaria, intestinal and parasitic affections.

About 85 per cent of the natives are afflicted with intestinal parasites, among which are the hook, pin, tape and lumbricoides. In a number of cases all varieties are found, the hook worm occurring in about 15 per cent. Diphtheria, measles, mumps and scarlet fever are rare among the islanders. Yellow fever has never visited the Philippines, although the stegomyia is abundant. Beri-beri was common in 1901-9.

The civil government has established on the plains of Benguet at an altitude of 5,000 feet the summer capital, which, like Simla in India, has become a popular resort, and a blessing to Americans and foreigners who are able to spend a few weeks up there during the hot and dry season.

Benguet has become a popular health resort, and besides many private residences, contains sanatoria for the army and civil government, hotels, churches and schools. The temperature ranges from 40 degrees Fahrenheit to 75 or 80 during the year, and open fires prove comfortable at all seasons of the year during evenings.

The Philippines have never been popular with the American people, and popular sentiment seems to be opposed to their retention. The islands passed into our hands as an incident of the Spanish-American war, and on account of the benighted condition of the natives so far, the United States has not been able to proclaim them independent.

In the retention of the islands the government has not only had its prestige and honor to maintain, but its sacred duty of spreading the gospel of personal and political liberty throughout the dark corners of the Orient.

AN OLD MIDWIFE'S TALE.*

By WALTER H. ALLPORT, M. D.

I.

Since that day when the midwife bound the red cord around the wrist of the first of Tamar's twins and the youngster's brother—still in utero—unfairly drew him back and took his first place away from him, the midwife has represented the human side of obstetrics. Whether in natural sympathy, in social and moral interest, as a raconteur or as an historian, in dexterity and kindly common sense and shrewd worldliness, her position is a normal one and, up to the limits of her education, she has filled it in the past with dignity and distinction. Unless we recollect the basic fact that her male competitor has unfairly absorbed to himself during the past centuries all the best of scientific education and all the position and profit resulting therefrom, it is difficult to understand how he has finally managed so successfully to supplant her also at a ceremony where she is a far more dignified, appropriate, and harmonious figure.

Were we to trace the history of the gradual usurpation of this peculiarly feminine function by a sex which, whatever its intellectual superiority may be, is without any doubt inferior in natural instinct and manual dexterity, it would probably disclose an astonishing, although unconscious parallelism with male usurpations elsewhere.

For the present, and under modern conditions of society and culture, the midwife as a factor in the history of great events is hardly to be reckoned with. Numerically, she may be as strong as ever, but her clientele can scarcely be said to represent the haute monde or the history makers of the present generation. And yet, such was not always the case—even within the memory of those now living. Not to multiply instances, it is sufficient to recollect that two years after Princess Charlotte¹ and her child died (1817) under the care of Baillie and Sir Richard Croft, a German midwife, especially imported into England for the occasion, brought the future Queen Victoria² successfully into the world. In 1811 Madame LaChapelle shared with Dubois the distinguished honor of confining Maria Louisa at the birth of the Duc de Reichstadt. Mrs. Stevens in 1762 attended the wife of George the Third at the birth of George IV,

*By courtesy of the American Journal of Obstetrics.

¹The Princess wanted a midwife, but Dr. Baillie insisted on Croft. Had the child lived, it would have ruled England. Mortification over the tragic outcome caused Croft to kill himself. See Playfair, *Obstetrics*, 1880.

and also at her subsequent confinements, although John Hunter was held in reserve in the next room.

But if we would know the midwife in her prime, and when high born ladies counted it but shame even to admit a man within calling distance of their lying-in chamber, we must go back quite 300 years to the days of Henri IV and the beautiful Gabrielle d'Estrees and the fruitful Marie de Medici. This was two generations before Louis XIV, grandson of Henry IV, smuggled in Julien Clement³ to attend the confinement of Mdle. de la Valliere (1663), and so set the bizarre fashion for the French court to employ men-midwives—at least for their mistresses.⁴

In 1600, at the court of Henry IV and Marie de Medici, the choice of obstetricians, even when it became the concern of queens, was merely between midwives, for the notion of a male accoucheur, except as a consultant, was hardly to be taken seriously by any woman making claim to respectability. The queen herself referred sneeringly to Guillemeau as "*Cet homme de Paris qui accouche les femmes.*"

Now it so happened that the king, in spite of the sterility of his first wife, Margaret of Valois, had already passed through numerous obstetrical experiences, chiefly at the bedside of la belle Gabrielle. The little Duc de Vendosme, who figures in the subsequent narrative, was the king's child by Gabrielle d'Estrees, and the latter had died in childbed but the year before (1599) of puerperal convulsions⁵. The

³She was the daughter of the Duke of Kent and of Princess Victoria of Saxe Cobourg Gotha. The midwife had confined the princess' German mother.

⁴Clement is incorrectly reported to have been the first man in France to attend normal labor. Of course, he was not, for Guillemeau antedated him by more than 50 years. And yet the temper of the times is shown by the fact that in 1522 a certain Dr. Wirtt was burned alive at Hambourg for assisting at a confinement disguised as a midwife. Even La Valliere—of shady morals and damaged reputation—is said to have kept her head covered with a hood during the presence of Clement in her room.

"Un despote, un tyran, petit-fils d'Henri quatre,
Qui triompha sans gloire et vainquit sans combattre.
Qui sans talens, des art devint le protecteur,
Qui de sang de son peuple, abreuva tout flatteur,
Qui de l'Europe enfin prépara la ruine,
Le premier en Europe a fait rougir Lucine,
Et changeant en vertu son impudique ardeur,
Au rang des préjugés a placé la pudeur."

Lacombe, Luciniade; a poem sparkling with wicked wit and license. As may be imagined, all of the sage-femmes of the day learned by heart, and frequently quoted, this particularly offensive passage.

The line in italics was based on Astruc's misstatement that Clement was the first man in France to confine women. Probably Astruc merely referred to the women of the court.

king, therefore, already had ideas of his own about midwives and proceeded to engage la dame Dupuis, sage-femme juree of the city of Paris, for the function. This woman had confined the king's sister, the Duchess de Bar, but was still better known to him from the fact that she was the very midwife who had delivered his three children by Gabrielle.

Lax as were contemporary morals, and especially those of royalty, it may well be imagined that whilst Dupuis may have been professionally all that was wanted, she could hardly deodorize herself to a point where the fine nose of the Italian queen would fail to detect about the sage-femme at least a suggestion of the subtle perfume of that beloved French mistress who was but just dead. Besides this most cogent reason, probably kept well in the background, the queen's maids of honor took pains to assure her majesty that, by personal experience, they knew Dupuis to be a superannuated old shrew. Naturally, the wife rebelled, at first secretly, then openly, and took council with her own physican, de Laurens, as to a midwife quite as safe and less redolant of the king's most notorious amour. De Laurens was a shrewd courtier and bowed to the inevitable, for in her fresh imperious will the queen was recognized as more than a match for the amorous but jaded Henry. In addition, she had a villainous temper which the king even thus early in their conjugal life had learned to fear. De Laurens arranged a meeting at the Hostel de Gondy, not far from Paris, between the queen and a certain Louise Bourgeois who had successfully confined many of the ladies of the court. It took the queen "but the space of a pater noster" to form a favorable opinion of the new midwife, and she returned to Paris with her royal mind made up. One shake of her head and one stamp of her foot brought the wearer of the helmet of Navarre to a proper sense of his conjugal duty, Madame Dupuis went snarling^a into the discard, and the midwife question was settled in that royal family for all subsequent confinements.

Six children were borne to Henry and Marie within nine years; a dauphin, the future Louis XIII; madame Elizabeth, future queen of Spain; Christina of Savoy; the duc d'Anjou;⁷ and Henriette Maria, wife of Charles II, of England. One child died an infant in 1611, the duc d'Orleans. At the birth of this child, which came into the world feet first, M. Honore, a well-known man-midwife, was held in reserve in an ante-room, but he never passed the door of the queen's

^aOne of the physicians (d'Alibou) who enjoyed the doubtful honor of acting as consultant in this case committed suicide shortly thereafter, thus antedating Sir Richard Croft by more than 200 years.

chamber, and Louise Bourgeois won the confidence of the court by delivering the child unassisted. This confidence remained unshaken until, more than 20 years later, Louise performed the same office for



the wife of another duc d'Orleans, and lost her royal patient three days after the birth of a daughter from septicaemia.⁸

⁸Delacoux.

"Borne looking toward the heavens." This prince became in 1626 on marrying Mlle. de Montpensier, the duc d'Orleans. He lived till 1660.

⁹See Apologia de Louise Bourgeois—Post.

Without Ambrose Pare—or Ambroise Paraeus—as his contemporaries called him, there would have been no Louise Bourgeois to head the long list of great French midwives. For at his call modern surgery and obstetrics awoke, and with it came not only Guillemeau,⁹ Honore, Clement, Moriceau and Deventer, but first of all in point of time and intimate association with the master, Louise Bourgeois herself. The surgeon is fond of remembering Pare for his work in gunshot wounds, for the new instruments his new art called into existence, and above all because he replaced the terrible fer ardent with the ligature. But the obstetrician remembers him because he called back from across the dark ages the ancient practice of podalic version in cross births and faulty presentations, and thus saved uncounted mothers and children from the horrible mutilations practiced upon them with various extractors up to the end of the 17th century.

Louise Bourgeois,¹⁰ sage femme juree, was born in the Faubourg St. Germaine, near Paris, in 1563, about the time much of Pare's work was appearing in print.¹¹ She was the daughter of a

⁹Guillemeau was another pupil of Pare—probably the most distinguished, for he was surgeon to the king. If Pare revived podalic version, Guillemeau amplified and developed its uses. Guillemeau and his colleague Honore devised our present method of bringing down the foot in cases of hemorrhage from placenta praevia. Between these two and Bourgeois existed a bitter and permanent feud, which culminated in the Apologie and the events immediately preceding it.

¹⁰The portrait shown herewith is from Gottfried Welsch, Hebam menbuch, 1628, which gives the interesting inscription omitted not only from Delacoux's lithograph but from the cuts accompanying the articles by Goodell and Hunter Robb. It is probable that all of the engravings were taken from the same source, which Goodell states was a portrait by Hacquin. This engraving, as is shown in the following poem, which in the book of Gottfried Welsch faces the portrait, was by De Bry:

AN DEN LESER.

Der Künstler, Mahler Kupffersticher höchste Klag
Ist diese, dass ihr Kunst und Fleiss Nichts mehr vermag
Dann nur allein dess Leibs Gestalt und Angesicht
Zu bilden ab, und forzustellen, doch gar nicht
Die Tugend, Kunst, Geschicklichkeit, Geist und Verstand,
Dadurch dess Menschen Zeel gespeist wird und erkand.
De Bry aber den Mangel seiner Kunst erstatt
Dann er mit seinem Thun ein andere Meinung hat:
Die eusserlich Gestalt zwar fur Augen stellt,
Kunstlich, durch Bildnus nacht dem Leben wie sichs hält.
Aber darneben der Person inwending Gab
Mag man anso ihren Schrifften klärlich nehmen ab
Dann was die stumme Bildnus nicht verrichten kan
Bey deser Frawen, zeigen dir ihr Bücher an
Denselben dich gebrauch, verständing, und mit Fleiss,
Den lieben Gott in seiner Wunderwerker preiss.

¹¹Les Oeuvres Complets containing the Book of Generation, Arquebuss Wounds, Anatomy, etc., appeared in 1561, Paris.

middle class family and received a better education than most women of that period; this fact will be obvious when we come to study her writings. Near by was the house of the great surgeon, and living under his roof was a certain barber-surgeon named Martin Boursier. Boursier lived with Pare for over 20 years and during that time came to know and marry Louise Bourgeois. During the birth of their first child, she became interested in the study of obstetrics and shortly thereafter commenced to practice as an unlicensed midwife among the poor of her neighborhood. She was dexterous and tactful and was instructed by Pare and by her husband, and her education enabled her to assimilate so thoroughly the teachings of Pare that in later years when she became herself a teacher and a writer, she was able to reproduce a good deal of his instruction without giving any too much credit to the source whence it came.¹² In those days it was necessary in order to become a licensed midwife—a sage-femme juree—to stand an examination before a board of examiners composed of doctors and midwives. In her memoirs she writes entertainingly about her difficulties in securing her certificates from this board; not because she lacked the requisite skill, but because the female members of the board with prophetic vision feared the influence which her husband and Pare would subsequently use to establish her practice. This fear was evidently well grounded, for one of her examiners was Madame Dupuis, whom she subsequently deprived of the patronage of the court and royal family.

When Madame Bourgeois was 36 years old, that is, in 1601, she was called, not only on account of the court influences already referred to, but because of her many personal and professional excellences, to Fontainebleau, to attend Marie de Medici. Behold her then, tucked into the boot of the royal carriage journeying with the queen and two court physicians to Fontainebleau for the approaching confinement. How she came to be selected over her competitors for the honor, how the carriage made the three days' journey of 40 miles over the rough road of those days, and how a dauphin—the first

¹²Observations diverses sur la sterilité, perçue de fruit, fécondité, accouchements, et maladies des femmes et des enfants nouveau nez. Ampliant traitées et heureusement pratiquées par Louyse Bourgeois, dite Boursier, sage femme de la Roynie. Paris, 1609. This book was translated into several languages. Original editions are rare. The writer has made use of a German version, bearing the date 1628; bound with the German edition of Gottfried Welsch, Hebammenbuch, etc., 1651, found in the Surgeon-General's library at Washington.

See also Hunter Robb in Johns Hopkins Bulletin, 1893, for an analysis of contents of this book.

for 80 years and the future king Louis XIII—was born at Fontainebleau, September 17, 1601; she has told us in her own naive and archaic *Recit veritable de la naissance de messeigneurs et dames les enfans de France, avec la particularitez qui y ont este.*¹³

Let us darken the room, push back the clock 300 years, draw aside the curtain, and hear from the lips of this remarkable woman the "veritable recital" of how a French dauphin was borne in 1601.

II.

"The birth of Louis XIII; how and in what time the queen was confined:"

The night of the 26th of September, at midnight, the king sent to call me to come to the queen, who was feeling ill. I was sleeping in the queen's dressing-room, where were also the ladies-in-waiting. These ladies often, finding me asleep, had previously played jokes on me by giving false alarms, and in such a manner that I thought this was one of the same. I heard myself called by some one named Pierrot, who did not give me time to fasten my clothes, he hurried me so!

Entering the bed-chamber of the queen, the king asked me, "Is this the midwife?" Somebody said to him, "Yes," and he said to me, "Come, come, midwife, my wife is ill—look and see if it is really her confinement—she is in great pain." Having examined, I assured him that such was the case. At the same moment the king said to the queen, "My dear, do you remember what I have said to you a good many times about the necessity of having the princes of the blood at your accouchement?" I beg of you to permit it—it is for the future greatness of you and your child," to which the queen replied that she had always resolved to do whatever would please him. "I know well, my dear, that you wish to do all that I desire, but I know your nature, which is timid and embarrassed, so that I fear if you do not make a great resolution, seeing them may prevent your confinement." That is why I beg of you not to be shocked, because it is according to the custom which always takes place at the first confinement of queens." The pains pressed the queen, and at each pain the king embraced her, and asked me if it was time to send for the princes, reiterating that I must warn him in time,

¹³Paris, 1626.—The following account is translated from "Nouvelle Collection des Memoirs relatif a l'histoire de France." Michaud et Poujoulat, Paris, 1854, to be found in the Newberry library, Chicago. Comment et en quel temp la reine accouche de Mone le dauphin, a present Louis XIII, des ceremonies qui y furent observies, l'orde y tenu, les discours intervenus entre le roy et la royne, et sur plusieurs autres occurrences, par Louise Bourgeois, dite Boursier, sage femme de la royne.

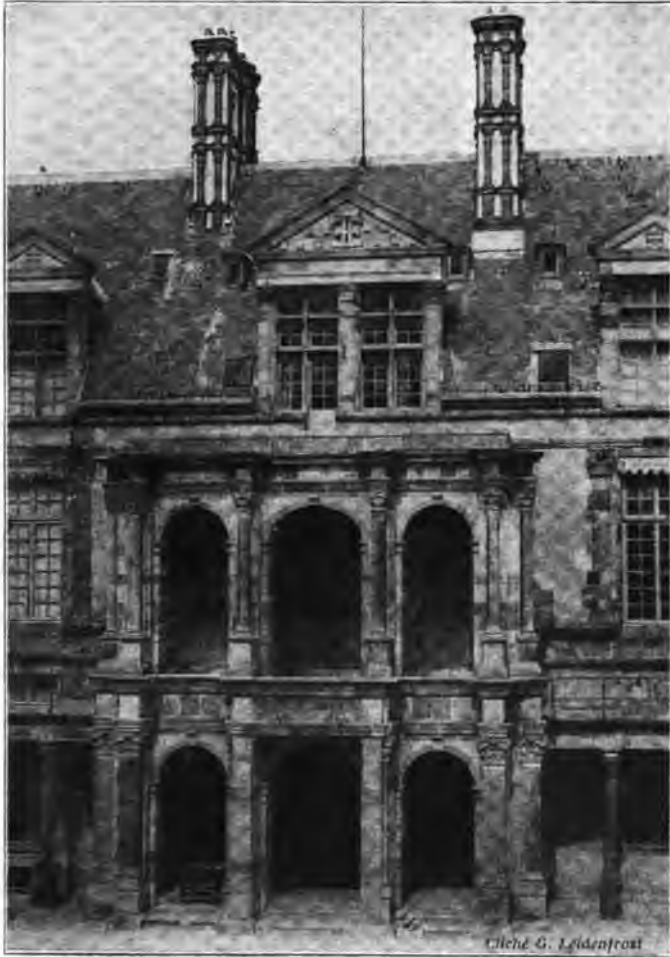
Also in the same library: Archives curieuses de l'histoire de France depuis Louis XI jusqu'a Louis XVIII. Cimber et Danjou. Beauvais, Paris, 1837.

¹⁴To prevent substitution.

¹⁵Evidently meaning that embarrassment might inhibit the pains.

as it was an affair of the greatest importance that they should be there. I told him I would not fail to do so when it was time.

About an hour after midnight, the king, overcome with impatience, seeing the queen suffer, and thinking that she would give birth to the child and the princes would not have time to get there, sent to seek for them. They were Messieurs the princes de Conti, de Soissons, and



Fontainebleau.

de Montpensier. The king said, waiting for them: "If ever any one has never seen three princes in deep trouble, one will soon see them now. These are three princes very full of pity and good nature, who, seeing my wife in labor, would give most of their possessions to be far away from here. My cousin, the prince de Conti, will not easily under-

stand what any one says, seeing my wife tormented; he will believe it is the midwife who is doing it. My cousin, the kind de Soissons, seeing my wife's agony, will have deep solicitude at finding himself compelled to stay; and as for my cousin de Montpensier, I fear he will fall down in his weakness, for he is not able to see anyone suffer." All three came before the two hours, and were there about half an hour. The king, having learned from me that the delivery was not very near, told them to hold themselves in readiness until he called. M. de la Riviere, first physician of the king; M. de Laurens, first of the queen; M. Herouard, also physician of the king, with M. Guillemeau, surgeon of the king, were called to see the queen, and also retired nearby.

In the meanwhile, the great bedroom of Fontainebleau,* which is near the king's bedroom, was prepared for the confinement of the queen. In it there was a great bed of crimson red velvet, ornamented with gold, near the bed of accouchement. There were also two pavilions, large and small, attached to the floor. The large pavillon was stretched and fastened like a tent by its four corners with cords; it was of beautiful Holland linen, about 20 ells square. In the middle of the large tent there was a little one of the same linen, and under this was put the bed of accouchement. Here the queen was put to bed on coming out of her bed-chamber.

The ladies whom the king had desired especially called to the accouchement of the queen were summoned. There was carried under the pavillon a chair, some folding seats, and some stools for the king, madame his sister and Madame de Nemours, to sit in.

The obstetrical chair[†] was also brought in; it was covered with crimson velvet. About four o'clock in the morning a great colic, mingling itself amongst the travail of the queen, gave her terrible pain without helping her along. From time to time the king made one of the doctors come to see the queen and speak to me so that I might know what was taking place. The colic made the queen suffer more than the travail, and even kept her from it. The doctors asked me, "If this were a woman and you were alone with the case, what would you do?" I proposed to them some remedies which they ordered at once from

*Fontainebleau. See prints.

†See print. Many old-fashioned midwives of Ireland and the continent still favor confinements in the sitting posture. An old Kentucky woman once told the writer that in the early days of that state, a chair was constantly used, and that it was often customary to have the seated husband hold the wife in his lap during the entire labor. It may be that this has accounted in the past for the smallness of Kentucky families. Jane Sharp in her *Compleat Midwife* (1680) states that she has heard this custom was also prevalent in Holland, but the following quotation from good old Cornelius Solingen shows that Jane was slandering the Dutchmen. It should be recollected that brave Admiral Van Tromp with his broom had left no pleasant recollections of the Dutch amongst the dwellers about the mouth of the Thames river. Cornelius speaks thus: "Here in Holland in certain towns we have certain women called *Schootsters* who are used during confinements in place of obstetrical chairs, and in whose lap the patients sit during delivery."

the apothecary, who proposed to them others in the Italian style, which he said in similar cases had done much good. Knowing the great zeal which the apothecary had in the service of her majesty, and knowing that if the remedy did not do all the good he claimed for it, it could not do her any harm, I made no protest, so they gave it to her.

There were also two old and wise Italian maiden ladies with the queen, who had assisted at the birth of many children and had attended many accouchements in their own country. The queen, to show her friendship for them, had wanted them at her confinement to serve as ladies' maids. The relics of Madame Sainte Marguerite were on the table in the bedroom, and two holy men from Saint-Germain-des-Prez prayed God without ceasing.

The king said he did not wish any one to give any advice excepting the doctors, and that we should agree together, so that I can say I never saw anywhere such tranquillity and peaceful spirit because of the



Obstetrical Chair.

good order which the king brought there, and the assurances which the queen gave him.

To combat the insupportable colic, it was necessary to use a great many remedies. To these the queen made no resistance; for as soon as the king or doctors talked to her, she was content, and took them no matter how disagreeable they were. That is why many women, because of being so obstinate, have been the cause of things going wrong either with themselves or with their children. The queen's sickness lasted 22¾ hours, and her courage was an admirable thing. She discerned clearly the first pains as well as those last ones when the terrible colic came. During all the time she was in travail the king never left her once, excepting when he went out for something to eat; then he sent constantly for news from her, and madame, his sister, did the same.

The queen, before her confinement, did not wish that the little M. de

Vendosme" should come into her room during her illness, because of his youth, but she, on account of the pain, did not take note of his presence. He asked me every little while "if the queen would soon give birth." To quiet him, I said "yes." Then he asked me what the child would be, and I told him it would be what I wished it to be. "What," said he, "is it not yet made?" I said "yes" that it was a child, but that I could make it a boy or a girl, whichever pleased me. He said "midwife, since it depends on you, put the pieces of it into a boy." I said, "If I make a boy, Monsieur, what will you give me?" "I will give you everything you wish, or rather, everything that I have." I said, "I will make it a boy and will not ask anything of you but the honor of your kindness and that you will always wish me well." He promised me that, and kept his promise.

When the remedies had driven away the colic and the queen's real labor commenced, I saw that she restrained her cries. I begged of her not to suppress them, for fear her throat would swell." The king said to her, "My dear, do what your midwife tells you—cry, that your throat may not swell." She desired to be confined in her chair, and being seated, the princes who were beneath the large pavillon sat face to face with her. I was on a little seat before the queen. I placed M. le Dauphin in his linen wrappings, so that no one knew, excepting myself, what sex the child was. I wrapped him up well—this I understood was what I had to do. The king came near to me. I looked closely at the face of the child and saw he looked very feeble because of the great pain which he had endured. I asked for some wine from M. de Lozeray, one of the first valets de chambre of the king. He brought a bottle—I asked him for a teaspoon—the king took the bottle, which he held. I said to him, "Sire, if it was any other child I would put the wine in my mouth and give it to him that way, because of his great feebleness." The king put the bottle against my mouth and said, "do to it as you would to another." I filled my mouth with the wine and thus gave it to the child. At that instant he was conscious and tasted the wine which I had given him."

"The duc de Vendosme was the illegitimate child of the king and Gabrielle d'Estrees.

"The belief is still current in many parts of Europe that goitre—bronchocele may be caused by holding the breath during the expulsive pains of labor. "Unter den Wehen das Haupt aber in etwas vor sich gebogen halten sollen, damit durch starke Athems holen in der Arbeit der Hals nicht kropfficht werde." Nothwendig ünd Nutzlicher Hebammen Unterricht. Meiningen, 1682.

"Good old Dr. Goodell must have been nodding when he prepared his translation of this passage; the French is somewhat archaic, but the meaning is plain. The original reads: LeRoy vint auprès de moi; je regarde l'enfant au visage que je vis en une grande foiblesse, de la peine quil avoit enduree, je demande du vin a M. de Lozeray, l'un des premiers valets de la chambre du Roy. Il apporta une bouteille je lui demande une cuillère. Le Roy print la bouteille qu' il tenoit. Je lui dis: "Sire, si c' estoit un autre enfant, je mettrois du vin dans la bouche et fui en donnerois, depeur que la foiblesse dure trop." LeRoy me mit la bouteille contre la bouche et me dit: "Faites comme a un autre." J'emplis ma bouche de vin, et lui en soufflay. A l'heure mesme il revint et savoura le vin que je lui avois donné.

I saw the king sad and changed—he had drawn away from me. He did not know what sex the child was—he had only seen its face. He went to one side of the pavillon and told the two femmes de chambre to get the bed ready. I nodded at Mdlle. de la Renouilliere to give her the signal^m so that she could go and get the king out of his trouble; she was fixing the big bed. Then I saw Gratienne; I said to her, "My girl, warm a piece of linen for him." Then I saw her go over to the king, who pushed her aside and would not believe what I had just told her. He said that it was a girl—that he knew it by my face. She assured him that it was indeed a boy and that I had told her so. He said to her, "She made a wry face." "Sire, she told you that she would make it," and he said to her, "that is true, but it is not possible if it had been a boy she could have made such a face." She replied to him, "It is possible, because she did it." Mdlle. de la Renouilliere came in. She saw the king was angry with Gratienne. She came to me and I gave her the signal. She questioned me in my ear and I whispered back "yes." She took off her cap and went to make reverence to the king. She told him that I had given her the signal and had also told her in her ear that it was a boy. The color came back to the king. He came over to me beside the queen and bent down to put his mouth against my ear and asked me, "midwife, is it a boy?" I said "yes." He said, "I beg of you, do not give me a short joy—that would kill me." I unwrapped the little Monsieur le dauphin and let him see that it was a boy, but so that the queen did not see anything. He raised his eyes to heaven, joining his hands, and gave thanks to God. The tears rolled down his face as big as large peas. He asked me if I had told the queen, and if there was any danger in telling her. I said "no," but I begged his majesty that this should be done with as little emotion as possible. He went over and kissed the queen and said to her, "My dear, you have had great pain, but God has been very good to us in having given us that which we asked of Him—we have a fine son." The queen clasped her hands together and lifted them, with her eyes, toward heaven—bursting into tears, and then became very weak.

I asked the king to whom he wished me to give Monsieur le dauphin, and he said "to Madame de Montglas, who will be his governess." Mdlle. de la Renouilliere took the dauphin and carried him to Madame de Montglas.

The king then went over to impress the princes with the weakness of the queen, then opened the bedroom door and invited in all the people that were out in the ante-chamber and the grand cabinet. I believe there were 200 persons, so that one could not move through the room to carry the queen to her bed. I was infinitely angry at seeing this. I said there was no reason for every one coming in here; that the queen was not yet through her confinement. The king heard me and tapped me on the shoulder and said, "Keep still, keep still, midwife—don't be angry—this child belongs to the whole world, and every one must rejoice over him." It was half past ten o'clock at night, Thursday,

the 27th of September, 1601, day of Saint Cosme and Saint Damian, nine months fourteen days after the marriage of the queen.²¹

The valets de la chambre of the king and queen were called. They carried the obstetrical chair near the bed and the queen was then moved. Something was administered to her for her weakness, and having given her the service which was necessary, I took charge of M. le dauphin whom Madame de Montglas gave back to me. M. Herouard commenced then to wait on the child. He bade me wash it entirely in wine and water, and to look it all over before I bandaged it. The king brought up the princes and several noblemen to see it; all those belonging to the household of the king and queen saw the child, and then made places for others. Every one was so glad they could scarcely express themselves. They all embraced each other without regard to who they were; they were so transported with joy they did not know what they did. I was told that through the entire town all night there were bonfires and the noise of trumpets and drums. Casks of wine were broken open, to be drunk to the health of the king and queen and the dauphin, and the messengers were sent out post-haste to all foreign countries to carry the news, and through all the provinces and towns of France.

As soon as the queen was put to bed the king had his bed made near to hers, where he laid down to see that all went well with her.

The next day after dinner I found M. de Vendosme alone at the door of the ante chamber, holding aside the curtain of the cabinet through which one passed to go into the room of M. le dauphin. I stopped, very much astonished, and I said to him, "what are you doing there, Monsieur?" He said, "I do not know—scarcely any one talks to me—no one says anything more to me." "That, Monsieur, is because every one goes in to see M. le dauphin, who has just arrived. When every one has greeted him they will speak to you, as formerly." I told this to the queen, who felt very sorry for him, and said, "Behold, this kills the poor child," and ordered that every one should caress him, as formerly. "Every one is taken up with my son, and no one thinks of him, and that seems very strange to this child." The kindness of the queen was always very great.

The 29th of this same month I went to see M. le dauphin; the page, Biri, opened the door for me. I saw the room full; the king, madame his sister, the princes and the princesses were there, because they were just going to baptize M. le dauphin. I was about to retire, but the

²¹Mdlle. de la Renouillieres and Gratiennne were each anxious—for their own reasons—to have the honor of being the first to notify the king of the sex of the child, and each had arranged for her own exclusive code of signals.

²²The same interesting collection of French historical memoirs from which this account is translated contains also a description of the last illness and death of Louis XIII.

There was a story current during the succeeding century that the queen had numerous miscarriages before the birth of the Dauphin, and that she had been bled from the foot by Fernelius to remedy the tendency, and that this surgeon received 50,000 guildens for the happy outcome. This story is quoted by Cornelius Solingen, but the dates given above would seem to put an effectual negative on the story.

king saw me and said, "Come in, come in, you need never stay out." He then said to madame and the princes: "I have seen many persons, but I never have seen any so resolute, be it man or woman, in war or elsewhere, as is this woman here; she held my son in her lap and looked at the whole world with those eyes as cold as if she held nothing at all instead of a dauphin, and it has been 80 years since one was born in France!" I replied to this, "I have said to your majesty, Sire, that it was necessary for the health of the queen." "That is true," said the king, "and I did not tell it to my wife until it was all over, so that the joy would not upset her. Never a woman did better than you did; if you had done any different my wife would have died. Hereafter I shall always call you *Ma Resolue*!"

The king did me the honor to ask if I wished to be the nurse of M. le dauphin, and that I could have the same wages as the wet nurse. I begged his majesty to allow me to continue my profession, so that I would always be more capable of serving the queen, and so that he



Fontainebleau.

would always have near her an honest woman who understood her well. I remained near the queen to serve her in her bed one month, then eight days afterwards, awaiting the return of his majesty from Paris, who had asked me to wait for him.

It would take too long to quote the entertaining accounts which this old midwife gives us of five other royal accouchements, but even at the risk of being accused of prolixity, we cannot pass by the interesting picture of contemporary life contained in the following incident occurring in 1602, just previous to the birth of Madame Elizabeth, the future queen of Spain. The story carries its lesson even to twentieth century readers:

The queen being large with madame her eldest daughter, the royal family went to Fontainebleau for her accouchement. Immediately on their arrival, one could see numberless wet nurses busy soliciting the

king and queen and everybody else with any influence. Since their majesties made the selection at Fontainebleau, it was necessary for each candidate to go there whatever it might cost, and the accouchement of the queen being expected soon, she made haste with her selection. In this connection a certain affair gave me a great deal of trouble. Among other candidates a certain man brought his wife for inspection; they had a little daughter, very delicate and pale. The woman appeared honest and came of such good people that some of the first gentlemen of the court recommended her warmly to the doctors. She lodged with one of my friends who willingly engaged to speak for her, and she begged me also to do what I could. But I saw that her child was extremely thin, so when any one spoke to me about her I did not respond very readily. Going one day to examine her, as was my custom, I heard this wet nurse spoken of by her husband's name. Then I remembered that this was the name of a young man whom my husband had treated for *la verolle*,^m and who insisted upon leaving before he was cured. I had heard it said that no one could keep him from going away. He told my husband that he was cured, that he felt perfectly well, and that he was going to be married. When my husband remonstrated with him and told him what would happen, he only mocked at him. Two or three years afterwards I saw some one from his town, and I asked news of him, knowing he was married. They told me that it was a long time since his return from Paris, but that he had trouble in his household, that his wife had had two or three children who were born diseased. I remembered that my husband had said he was not cured, and that if he married something would surely happen to him. Then I was very much troubled and wished I had never seen the woman. She saw that I changed color, and begged me to tell her the cause of it. I did not wish to do so, but she forced me by her prayers, and I told her that I did not take part in the selection of the wet nurses to do any one harm and that I felt very sorry for her because she did not know what her disease was. Meanwhile, if she should be hired I would speak, but if she should not be hired I would not speak, but would let her go back to her own country. She was engaged, and they were preparing to dismiss all the others. It was time for me to speak. I sought Monsieur de Laurens, who had gone to a dinner party. When I found that he was not there to say when the other nurses were to be sent away, I begged Mdlle. Sauvage, *femme de chambre* of the queen, to go and tell her for me what the trouble was, which she did. She replied, "Go back to the midwife and tell her she has rendered me a great service today; if I had been told this by any person but her I would not have believed it." The queen repeated this to the king, who said in a great rage that the wet nurse had come from a long distance to thus deceive him. He sent for Monsieur de Laurens and the other doctors to get at the truth, and to inquire how I would prove what I had said. I told them all, and for proof there was a *valet de chambre* of Monsieur Beaulieu-Ruze, who, living at the time in our apartments, had assisted in bandaging the man, and another surgeon at Auxerre, who

^m"The pox"—syphilis.

was with us at the same time. So my statement was verified. I was very sorry for the disappointment of the woman, but I owed it to my service with their majesties. They then selected another wet nurse.

For 27 years Louise Bourgeois served the court and royal family faithfully, and without any mishap which could justly have been laid at her door. For every royal son, she received 500 crowns;²⁴ for every daughter 300 crowns, and the queen made her rich presents from time to time out of her own pocket. In addition she received 300 crowns for her two months' service during each confinement. Besides the gold cross and chain worn by other royal midwives, she wore, as a mark of special favor, the dignified and picturesque velvet cap worn by the royal nurses and never before worn by a midwife. De Laurens and Jacques de la Cuisse were her friends, but with Guillemeau and Honore she waged a successful but unceasing warfare of wit and sarcasm, not to mention the other less public weapons employed in those days by competitors for royal favor. These two old enemies, however, at last came in for their innings. In 1627 came her débâcle. She was getting on in years and should have retired, unblemished and gloriously, on the pension of 300 crowns, which she had drawn ever since the birth of Henry IV's last child. But ambition and avarice never grow old, and the retiring age, when not arbitrarily fixed, is apt to recede a year or so annually. In the year 1627, either the stars combined against her, or her hand had parted with its cunning, for she lost a royal princess from something which to our modern eyes looks suspiciously like a virulent puerperal peritonitis. It requires no stretch of our modern imagination to guess at what followed. Ten medical gentlemen swooped down on the body of the poor little princess scarcely out of her teens and "posted it" with no more mercy or intelligence or regard for the truth than would have been displayed by a present day coroner's physician. Here is the protocol; Master Jacques de la Cuisse was present, but refused to sign it, and Brunier and Guillemeau signed it though not present:

Protocol of the dissection of the dead body of her ladyship, the late Duchess.²⁵

²⁴A French crown or ecu was the equivalent of the old English or Scotch crown worth from three to five shillings. The ordinary French crown was worth from three to five francs or livres. There were, however, gold and silver crowns of greater value. Very likely the denomination referred to was the ordinary crown, which would have a purchasing value of about \$1.50 in our present American money.

²⁵The reader is reminded that the duchess referred to is the Duchess D'Orleans, wife of the Duc D'Orleans, one of the princes of the blood, and formerly the Duc D'Anjou. She was before marriage Mdle. de Montpensier, daughter of the duchess of the same name, and but 20 years of age.

We, the undersigned. Franciscus Vautier, consulting court physician of the late queen; Peter Seguin, court physician of the queen; Rudolf Maistre, Frantz Tournaire, court physicians of her late highness the Duchess; Abel Brunier, Doctor of Medicine; Carle Guillemeau, Doctor of Medicine and surgeon of the king; Johann Menard; Simon Pimpernelle, appointed surgeon of the dowager queen; Wilhelm Carillon and Frantz Neron, expert surgeons of the late Duke and Duchess, Testify,

That we dissected the dead body of her ladyship, the Duchess, by order of her majesty, the king's mother; that we took notice of all inner parts, and found the cavity of the stomach and entire contents of the abdomen filled with putrid matter. The intestines were inflated with gas, the stomach small and bloated, the liver shrunk and dry, the small bladder which contains the gall very much enlarged, the spleen larger than it should be, the kidneys small but in good condition, the bladder very small. The matrix^u was, so to say, floating in a pus-like substance, which filled the lowest part of the abdomen from the umbilicus to the symphysis pubes. The matrix was infected by cancer from the outside into the wall, especially on the left side and at the place where it touches the rectum. Within the matrix on the right inner side and at the bottom or wider part, a small piece of the placenta was found, attached so firmly that we could hardly take it off or separate it with our fingers. The lungs were strong and in good condition and not adherent to the sides. The heart was very small. No water was found in the inner heart or cardinal cavity, and the brain was without any defect.

That this is the exact truth, we testify with our own names and signatures.

Given at Paris, on the fifth day of June, 1627.

Vautier,
Le Maistre.
Brunier.
Menard.
Carillon.
Seguin.
Tournaire.
Guillemeau.
Pimpernelle.
Neron.

Yet one could hardly expect an old fighter like Louise Bourgeois to strike her colors or to silently accept such a verdict, even though signed by the most distinguished French medical men of her day. And after reading her Apologia we must admit that even if we cannot clear our minds of the suspicion that the Duchess's infection might have been introduced per vaginam by the midwife's fingers, instead of through those old ruptured pus tubes which the learned faculty called cancer, she has at least cleverly established a tu quoque in her charge that her accusers failed not only to describe accurately what they saw but even to know at all what they were talking about. Her pen was dipped in gall, probably also in truth, when she wrote the following vindication, and none of the physicians dared to answer her over their own signatures. But her day was done; she was a

^uUterus.

dead—hen in the pit; the protocol killed her; she confined no more duchesses and spent the rest of her years writing recollections which added nothing to her reputation and might better have been left unrecollected.²⁷

APOLOGIA²⁸.

Or justification of Madame Loysa Bourgeois, Royal sage-femme, contradicting the report of the Doctors of Medicine:

I, the undersigned, having read the printed protocol of the dissection of the dead body of her late Highness, et cetera, which the doctors and surgeons who operated upon her ladyship, the Duchess, during her recovery from confinement, have written and published, by which they tried to justify themselves and put the cause of her death entirely upon my shoulders, find it necessary for the saving of my honor to reveal the entire course, truthfully and thoroughly, of what happened after and during her illness; by which statement it will appear as clear as daylight that the cause of her death did not proceed from the small remains of placenta, as has been wrongfully stated in the protocol.

I wish to state that her Highness, the Duchess, was, during the entire period of her pregnancy, in poor health. She was troubled at times with fever, flushes, and nose bleed, and during the last month with coughing, for which reason she had been bled three times. Shortly after her confinement she had fever which did not seem to subside. As far as the birth was concerned everything went well, thank God, not alone in regard to the child, which was born in the normal way, but also as concerning the afterbirth, which was entirely natural and as it should be. She was later examined by Master Jacob de la Cuisse, an experienced surgeon, who had a large practice in such cases. This examination occurred in the presence of the doctors, Vautier, Seguin, Le Maistre, Tournaire, Brunier, and Guillemeau, who all recognized that the above mentioned afterbirth was normal and in proper condition; as to this I will pledge my life.

Concerning the small piece which the doctors claimed to have been from the placenta, and which grew so close to the matrix that it could hardly be scraped off with the finger, this was not in any way a part of the above mentioned afterbirth, but the place to which the morsel of flesh commonly called the placenta is normally fastened, which place is more protuberant than the other inner parts in the body of the uterus until the puerperal woman has entirely recovered. This protuberance, or elevation, is really a part of the uterus, and is often taken out of ignorance—I will not say malice—for a part of the afterbirth. This mass could not be removed except with the use of a scalpel. It is well known that the uterus of a pregnant woman is for more than a

²⁷Recueil de Louise Bourgeois. Paris, 1835.

²⁸The Apologia and postmortem protocol are translated from Gottfried Welsch Hebammenbuch and bear the date Franckfurt, 1629. The French original appeared in 1627. The protocol here reproduced is verbatim, but the present writer has thought best, for the sake of space, to eliminate from the Apologia several pages of seventeenth century vituperation.

whole month after her recovery from childbirth made up of many membranes, lying one above the other, like the layers of an onion. This lasts for more than a month before delivery and for about a week after until gradually the matrix shrinks. Therefore, it is proved that they have torn away this protuberant part of the inner membrane of the uterus, to which the afterbirth had been attached. Whosoever thought out this falsehood and tore this fleshy membrane off the uterus and declared it a piece of the afterbirth has a poor knowledge of the art of which I am speaking. You show sufficiently, with your bungling report, that you have no knowledge whatever of the nature of the placenta, nor of the matrix in women, neither before her delivery and puerperal state, nor after. You are as ignorant in these things as your Master Galeno, who, though he never had a wife or was hardly ever with pregnant or child bearing women, yet took the liberty to dictate to midwives how to discharge their duties, and even wrote a book on this subject in which, however, he betrays that he never knew anything about the uterus of a pregnant woman nor about the afterbirth. My opponents shall take upon themselves the disgrace and reproach, for having declared this harmless uterus to be affected by cancer. The cause of the Duchess's death was an inflammation of all parts of the abdomen, where, according to their own verdict, pus had collected, against which the uterus could not battle. This infection in such quantity could result from nothing else but from inflamed tissues and bowels, which finally developed cancer and caused the watery substance of the blood to retreat to the cavity of the abdomen, gradually changing into pus. Doctor Riolanus, in presence of the king, of the dowager queen, and of the Lord Cardinal,² announced the cause of her death (which could not be prevented) as nothing else but cancer in the lower parts of the abdomen. This part was swollen, as firm as a drum, and as if she had not been delivered of her child. Other doctors who were present agreed with him. Remember, also, that the Duchess suffered after her delivery until the hour of her death from continuous diarrhoea, expelling often a greenish and blackish matter, denoting great fever and putrefaction in the bowels. This matter passing through the rectum caused the change in the adjacent matrix which you observed. Nor should you have omitted from your protocol the following important facts, had you spoken the truth faithfully: You should have told how much her abdomen was swollen as well before as after her death, which would have been proof enough that it was cancer of the bowels. This necessarily causes an inflammation lasting longer than twenty-four hours. Neither should you have failed to describe the various parts and state their color, as important changes take place in these cases, and certain symptoms may be taken as the forerunner of death. In plain language, you simply will not admit that it was inflammation and cancer of the intestines. Nor have you spoken clearly even of the uterus, the size of which you certainly should have described. All you noticed is that her lungs were

²Richelieu. This affair gave the Cardinal nearly as much trouble as it did the midwife; he was accused of having poisoned the Duchess, hence the post-mortem.

sound, not adherent to her sides, that her brain was normal and without any defect.

I am convinced that if honest, expert professionals in this matter had been chosen as judges, they would never have approved of your invention concerning the placenta, which subject you had canvassed already before the post-mortem, with the intention of accusing me of her death. These men would not have allowed you to name in your report those persons who were not even present; for instance, Ms. Brunier and Guillemeau, nor was there any mention of the surgeon, Master de la Cuisse, who assisted me during the confinement of her Highness. He was present during the dissection and declared that the injured part was not the placenta but was the result of using the nails and scalpel on a part of the fleshy membrane which nature had left inside the uterus—all of which should be sufficient to prove your report mistaken and untrue.

I have practiced my profession now for fully 34 years, faithfully, diligently, and honorably, and acquired not only a good certificate, after various examinations, but have also written books treating on this subject, which have been printed and published in several editions and were translated into foreign languages, for which trouble many noted physicians have rendered me thanks and have gladly confessed that they were of great use to humanity. If I had knowingly left a piece of the placenta inside the matrix, I should have mentioned it in time, in order to have asked advice and help. And should I not have known it easily enough by simply examining the placenta? Such a mistake would have been evident, within 24 hours, by symptoms which never fail to develop in that time. As none of the conditions referable to retained placenta appeared and the lochia showed neither bad color nor odor, you men of science who are such experts in the diseases of the child-bearing woman should have warned us to prepare for other dangers.

Besides, let me tell you, that if a small piece of the placenta should have remained inside (which, however, did not happen) it would have decayed and detached itself and passed normally with the lochia, which flowed incessantly until the day of her death. We have this experience daily in our practice. On the fourth day after the birth small and tender fibres were passed normally, as fine as a spider's web, which the specialists call amnion and chorion. You will probably contradict this. However, I wish to reply that Hippocrates, whose experience in female troubles and diseases is very famous, declared that the wife of a tanner who had been confined normally had passed on the fourth day a piece of membrane, without any accident or dangerous consequences. This great and excellent man wished to give posterity to understand that this is as a rule neither harmful, nor of great consequence or danger.

No one could claim, after reading the treatises of noted scribes that a small piece of placenta which was dried up and attached to the uterus without putrefaction ever caused death. I read myself in Paulo Aegineta's work on surgery that no doctor need be surprised to find pieces of the placenta discharged even on the fourth or fifth day after confinement of some women. I am also informed that a famous sur-

geon and anatomist, called ab Aquapendente, was of the same opinion, and asserts that he had seen many women who evacuated the putrid placenta in pieces, yet did not die of it.

So you see, you gentlemen of the Faculty, that you made a great blunder in attributing the cause of death to this invented story of the placenta. Why did you not rather ascribe it to the lasting attack of fever, which affected the patient before as well as after the birth, or to the cough which tormented her before and after confinement, or to diarrhoea, which appeared too soon after? Every one of these three diseases are dangerous for a puerperal woman, and you should have considered them with more judgment and insight.

If you wish to learn something about the secret troubles and diseases of women, you should associate often with midwives and assist them in the treatment of child-bearing women, not only once or twice, but often, like your great Master and Law-giver, Hippocrates, who had no aversion to meeting and consulting with midwives or to asking for their help.

These things I have found it necessary to explain to you, for the sake of my honor, and in my defense, against the calumnies which were spread against my good name and reputation. I will gladly submit to the verdict of medical experts in Paris and elsewhere (besides those others who take a great interest in this matter) as well as those persons whom her majesty will be pleased to choose for my justification.

Given in Paris, June eighth, A. D. 1627.

LOYSA BOURGEOIS,
dite Boursier.

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CHRONIC GONORRHEA AND MIXED INFECTIONS, THEIR LOCATION AND TREATMENT.*

By F. KREISSL, M. D., CHICAGO.

A number of authors have made and still make the assertion that in between 75 to 80 out of 100 cases of acute anterior gonorrheal urethritis, the posterior urethra will become involved sooner or later. This is quite a sweeping statement and requires some modification. I would say that of 100 cases of acute anterior gonorrheal urethritis, which do not receive the proper and efficient treatment in the earliest stages of the disease, in over 90 per cent the infection will pass over the cut off muscle into the deep urethra, the prostate gland and the seminal vesicles. In many cases the Cowper glands will be involved and in every one of the 100 cases, the gonococcus will be found safely intrenched in the follicular apparatus of the anterior urethra.

The time when the disease attacks the deep urethra varies. I have seen cases in which posterior urethritis appeared as early as the third day after the trouble was first noticed in the anterior portion. These were mostly cases which had been treated with vesical irrigations of permanganate solutions from the beginning. At other times a gonorrheal urethritis remains confined to the anterior portion for many weeks before it will pass into the deep urethra. But these are the exceptions. There are several reasons why the involvement of the posterior urethra and the adnexa is not discovered as soon as it occurs or even after having existed for quite a while. The infection of the posterior urethra does not always commence in an acute manner with pronounced symptoms. Even after involving the follicles of the prostate patients rarely complain of uneasiness or pain. It is only when follicular abscesses form, or the parenchyma is drawn into the inflammatory process that the infection of the posterior urethra is recognized by the manifestation of a real sickness.

These mild cases of posterior urethritis could be recognized in their incipency if the two-glass test of the urine would be employed more frequently and as a routine procedure whenever the patient is seen, and this should be done as often as every third day in the first two weeks of an acute anterior urethritis. The two-glass test, however, should not be made in the customary manner by simply

*Read at the Meeting of the North Side Branch of the Chicago Medical Society, November 10, 1911.

having the urine voided in two portions. The test should be preceded by a thorough irrigation of the anterior urethra. If this precaution be neglected and the urine in the first glass be cloudy the second clear, we can only say that discharge was flushed out from somewhere in the canal, but not whether it came from the anterior portion alone or from the latter and the posterior. If on the other hand the secretion from the anterior urethra be first washed out by the irrigation and the first glass of urine be cloudy, the second clear, we establish with certainty the presence of an infection in the posterior urethra. And this is of great importance for the further course of the disease. If left to itself sooner or later acute complications will set in, of which I mention prostatitis, vesiculitis, epididymitis, cystitis and abscess of the prostate and seminal vesicles. At other times the process proceeds as it started, without acute symptoms, but nevertheless just as destructive, or perhaps even more so, because it is permitted to go on unchecked by any attempt of treating the infected structures. It is this particular type of chronic infection which I have selected as the subject of my brief address, because it is largely responsible for the time-worn adage "Once a gonorrhoeic always a gonorrhoeic." And it is also responsible for the many unexplained cases of neurasthenia, rheumatic pains, sexual debility and the so-called kryptogenetic sepsis. To prolong a urethral discharge or to see it recur without any palpable cause, or to produce the above mentioned conditions, it is not necessary that the infection should be of purely gonorrheal character, or even should commence as such. Other germs, particularly the pneumococcus and staphylococcus, are capable of acting in the same manner. Among the hiding places most favored by these organisms and least thought of by the physician are the seminal vesicles and the crypts of the anterior urethra; next to them, according to their frequency, I enumerate the follicles of the prostate, the Cowper glands and paraurethral ducts. In order to overcome the apparent difficulty of diagnosing these cases and if diagnosed to locate the seat of the trouble, a certain systematic mode of procedure should be followed.

After cleansing the orifice of the urethra and the glans penis with a gauze pad moistened with benzoin, the urethral secretion, or if absent the filaments contained in the washings from the anterior urethra are spread as thin as possible on a glass slide and stained with a solution made up in the following manner: Add to 20 c. cm. glycerin, 2.50 c. cm. alcohol, 0.15 g. methylenegreen, 0.25 pyronin and 80 c. cm. of a 2 per cent carbolic acid solution. The microscopic pic-

tures obtained by this solution are very distinct on account of the contrasting colors. The plasma of the pus cells being light blue, the nuclei dark violet, the epithelial cells brown, the heads of spermatozoa light green and the bacteria light red. For a differential diagnostic purpose, however, this process of staining is of little value, it simply demonstrates the presence or absence of diplococci and other organisms. In order to designate a diplococcus as a gonococcus we employ the gram stain and the culture medium. The gram stain has only positive value if always carried out in the same manner in every detail. For instance, some staphylococci retain the color after exposure to alcohol for two minutes, but give it up after four or five minutes, and since some staphylococci closely resemble the gonococci a wrong diagnosis, sometimes followed by serious consequences, is not impossible.

If properly carried out the gram stain colors the gonococcus red, streptococcus, staphylococcus, pneumococcus bluish black, the heads of spermatozoa black.

While there are always gonococci and other micro-organisms in the urethral secretion in sufficient quantity to be readily found under the microscope, it is more difficult and requires much patience to discover them in the secretion obtained from the various foci into which they have gone in hiding because there are usually very few germs retained in these recesses. In order to procure these secretions methodically one after the other, we proceed in the following manner:

The anterior urethra having been previously cleansed by an irrigation with sterile water or a mild antiseptic, a short straight metal sound, No. 24 fr. scale, is introduced up to the cut off muscle and the glans steadied by gentle pressure exerted by the thumb and index finger of one hand. The corresponding fingers of the other hand perform a slight massage of the whole urethra, lasting from one-half to one minute, whereupon the sound is withdrawn; whatever secretion has been secured in this way will be partly on the sound, partly in the urethra. If copious it can be squeezed from the urethra, if scant it will appear in the fluid, which should then be used to irrigate the anterior portion. One will be surprised how much germ carrying debris can be obtained in this way from the urethra, the previous washings of which showed but one or two thin filaments. It is my belief that no remedy ever reaches the bottom of these crypts and is capable of emptying their contents. Daily massage over a sound followed by an irrigation with an antiseptic will

be found very efficient. Massage over a sound also conveys a distinct feeling of infiltrated follicles and crypts.

Having ascertained the presence or absence of a focus of infection in the anterior urethra, the latter is thoroughly irrigated with sterile water whereupon both Cowper glands are palpated and massaged for a minute. This is followed by irrigation of the anterior urethra and the fluid received in a sterile basin. If perfectly clear and free from shreds, the Cowper glands may be considered free from infection, if cloudy or even only opaque the fluid should be subjected to the albumin test. The latter, if positive, proves the existence of a pathological condition. Should shreds be found they will have to be examined in the usual manner. We then proceed to the examination of the prostate and seminal vesicles. Urethra and bladder are now irrigated with sterile water and a few ounces of the same left in the bladder. The prostate is massaged, the patient ordered to void the filling fluid in a sterile receptacle and the contents examined in the same manner as stated before, finally the same procedure is repeated for the examination of the contents of the seminal vesicles. In this way it is possible to establish with certainty the existence and localization of the focus or foci of infection, and to deal intelligently and successfully with the condition.

As stated before, very often the infection is confined to one or a few foci in the seminal vesicles. These cases present the following symptoms:

Type 1. Persistent scant urethral discharge, the orifice frequently glued together, the discharge increases slightly upon provocation of some kind, and decreases rapidly with or without treatment.

Under treatment the discharge disappears entirely but reappears when treatment is discontinued for three or five days.

Type 2. No visible discharge, the washings of the anterior urethra contain shreds of different size which settle at the bottom of the glass very shortly. This indicates pus in the shred, and therefore, permits to suspect the presence of pathogenic germ. Shreds free from pus cells on account of their lower specific gravity float in the washings. Urine in glass 1-shreds; in glass 11-clear. In glass 111 more or less comma-shaped shreds. The latter are expelled from the prostatic follicles and the seminal ducts by the terminal contractions of the circular muscle fibers.

Type 3. An occasional recurrence of urethral discharge sometimes on long intervals, the urine apparently clear and free from

shreds or containing one or two very small filaments in the free intervals. Occasionally with or without provocation a mild epididymitis or cystitis.

Yet in all these types palpation of the seminal vesicles and the ampulla will disclose tender or infiltrated areas and massage will bring some pathologic debris into the urethra, from where it may be obtained by injecting sterile water into the bladder. Sometimes even then, especially by the first massage, no solid particles are procured, but the washings when being chemically tested will give a positive albumin test. This is sufficient proof of a diseased condition in the vesicles.

In subsequent massage treatments the cloudiness will increase, shreds and eventually pus will be eliminated. The absence of visible pathogenic particles in the first treatments is due to the peculiar arrangement of the interior of the seminal vesicles, to the favorite selection of the germs of the lowest points and the tendency of these pockets to be closed up for a longer or shorter period. We find five different types of seminal vesicles: 1. Those with simple and straight tubules. 2. Those with large and tortuous tubules. 3. Thin and tortuous tubules with or without diverticula. 4. Straight or tortuous main duct with large grape-like diverticula. 5. Short main duct with large branch-like side ducts. The terminal side ducts show an alveolar type. This anatomical consideration readily explains the clinical picture and the pathology of infections of this tract.

There are cases in which nature is building a wall around these foci, a perivesiculitis encloses the alveolar terminus affected and the germs die off. In others this retention is but temporary, a sexual excess, a physical exertion, or simply a flaring up of the virulence of the germs increases the secretion in these retention cysts, finally breaking through the sealed ducts and appearing either as shreds in the urine or if copious, as a discharge in the urethra. In others absorption of the pathologic material through the lymphatics takes place, and we have the picture of a general malaise, of a grip-like attack of neuralgia or rheumatism, and occasionally of so-called cryptogenetic sepsis.

In other cases persistent phosphaturia is observed; in others again vesical symptoms with or without the expulsion of phosphatic debris at the end of urination are predominant. Many cases of phosphaturia unsuccessfully treated by internal medication belong to this type of staphylococcus infection.

In a small percentage we find the Cowper glands alone involved.

If normal, a Cowper gland cannot be palpated, if diseased, it is distinctly felt as a more or less hard nodule and is sensitive to touch.

The gland, if infected, is readily found on both sides of the median line, about one centimeter below the apex of the prostate. After irrigating the urethra and bladder and leaving 5 oz. of clear fluid in the bladder the gland is massaged and the bladder emptied. The fluid thus obtained is examined in the same manner as the one after massage of the vesicles or the prostate.

It is clear that neither of these hiding places of infectious organisms can be effectively reached by topical applications. The previously mentioned structure of the vesicles also explains why Belfield's method of injecting argyrol through an opening in the vas deferens has failed to accomplish much, and it is clear that only mechanical means will successfully remove this infectious material. But in order to be followed by lasting results, the massage has to be practiced daily, at least in the first three or four weeks. Naturally then the massage must be very gentle and brief not more than a minute at the time being consumed. Every massage should be followed by an antiseptic irrigation. If of gonorrheal character, we employ silver solutions. If of the other type oxycyanide of mercury will be found very efficient. In conjunction with the massage and only in conjunction but not alone the bacterin treatment will be a valuable aid in shortening the course of the disease. I give preference to autobacterins. If of pure gonorrheal character I do not employ the gonorrheal bacterin having found them of no value whatsoever in these cases.

THE VALUE OF CHILD STUDY.

By DR. D. P. MACMILLAN.

Director Child Study Department, Board of Education, Chicago.

The scientific study of the child and his environment has reached the point where a definite body of information can be made of distinctly practical service to parents, guardians and teachers of children and to those children themselves who are old enough to use practical suggestions for their own mental and physical hygiene.

Practical child-study is the application of all the known facts, principles and points of information which the experimental workers with children have succeeded in discovering or collecting to date. Its motto is the development of the powers of each child in the easiest and best way. Its chief concern centers about the great major number,—the so-called normal children, although special children, retarded, defective or even precocious, will always demand their proportionate share of special care and guidance. Studies of abnormal children are pursued largely with a philanthropic interest, for the benefit of the unfortunates to be sure, but ultimately for the sake of rightly understanding normal children, to improve health, to keep wide open the chances for normal physical growth and to insure natural mental development.

There are many children who are, from the physical point of view, retarded all along the arc of growth, others indeed, at times, from definite causes, are in certain particulars below the standards of their ages,—their growth is unbalanced or irregular, they may for instance, be too heavy for their height, too weak for their size, too slow for their proportions, lacking in symmetry and defective in poise, in brief, untrained in their form, their attitudes and their movements.

Again, from the point of view of mental growth and development, asymmetries may be as pronounced as on the physical side. The order of natural maturation of certain mental functions may be decidedly irregular and ill-balanced, and the causes thereof may lie hidden in unchecked hereditary tendencies, in unfavorable environment or in unwise training. The several indices of deviation from the normal for age, sex, race and family stock, can be read off in terms of the measuring-rods or norms of these several ways in which physical growth and mental development may be considered, carefully formulated from large numbers of the same types. Correctional and remedial measures must take the line of specialized care and specialized training.

It is very desirable, therefore, for parents to know whether their children are growing along the right lines so that the best may be brought out; the problems of growth become especially insistent at the epochal stages of second dentition, pre-adolescence and adolescence proper. It is important for them to know when a child is ripe to take up some special line of study; premature forcing of a mental function is frequently provocative of later weakness. Further, it is essential to know, on the one hand whether their child is crowded in training, or on the other, to find out whether he is wasting his precious years using only a small fraction of his native strength. All this centers about the average American child of interested and intelligent parents. To this should be added the necessity for the early detection and correction of defects of the senses, particularly of sight, of hearing and what is perhaps most aggravating of all, of minor speech defects.

It goes almost without saying that the exceptional child must have all the special care and special training that are beneficial and adaptable. It requires no special appeal to parents to give all assistance to atypical children or those who are in certain aspects or indeed in all life-features noticeable variations from type. Some indeed are so markedly subnormal that they must continue to be the objects of custodial care, others may become through specialized training, susceptible of such a degree of self-direction as to contribute in part to their own support in simple occupations, while others again with proper care may direct their own affairs, and lighten if not entirely lift the burden of dependence upon others, still further others may become wholly self reliant, though not contributors to the progress of society. The chief point to emphasize before parents is the insistence upon the early detection of the exact status of each child, and the determination of the laws of normative changes.

The most important asset of a nation is its children. The most vital concern of a family is its immature members, and immaturity is a long span. There is scarcely any parent who will deny any benefit or care which he knows will improve the chances of his offspring in the world to make that child more efficient, healthier, happier in his lot and life, and more susceptible of training in the right direction. To know means here to do. It is necessary only to make known to parents what they ought to do.

Individual differences in children present some of the most striking facts that become immediately apparent to those whose ex-

perience is sufficient to bring the matter home. Years of investigation with tens of thousands of children in America and Europe, have enabled students of child-life to establish certain norms, certain standards of growth and mental capacity. Here as elsewhere the most important thing, and be it added the most difficult thing, concerning data collected is its application to particular cases. The specialist alone, after years of study of individual cases, is able to interpret the variations from type found to obtain, and to make recommendations looking toward the complete development of the individual. The tendency in a democracy is to make all children alike, irrespective of the friction and the waste that is caused thereby. Each child has the right to demand that his life be developed to the highest possible point of which his powers are susceptible.

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Editorial.

EUGENICS ADVANCING.

Very Rev. Walter T. Sumner, dean of the cathedral of SS. Peter and Paul in Chicago, has recently taken the stand that all persons applying to him and his associates for marriage must bring a physician's certificate showing both parties to be normal physically and mentally and that neither is afflicted with an incurable or a communicable disease.

It will be remembered that Dean Sumner was chairman of the vice commission of Chicago two years ago and that he led the commission through an exhaustive and intelligent study of the causes and extent of vice in Chicago, the report of which is a model of its kind and is of immense service to the city and to the whole country.

In this new move Dean Sumner has the consent of Bishop Anderson, which gives additional evidence that the question has received careful consideration and study, and is not intended as an

experiment but as a permanent stand upon solid ground. So far as we are informed this is in advance of every other church organization of whatever kind, and certainly is in advance of the state, for nowhere in the country is there legislation upon marriage so far advanced.

Dean Sumner is in accord with medical thought and understands as well as the doctors do the ravages of venereal disease that are often visited upon the unsuspecting bride, such as pus tubes, cystitis, metritis, pyelitis, sterility, invalidism and often death if not relieved by the surgeon's skill. Such tragedies are the result of infections contracted by the husband, that were formerly alluded to as no more serious than a bad cold. The disease in turn was caused by immoral practices, usually associated with a certain amount of drunkenness, and is casually referred to in polite society as "sowing wild oats" or "going the pace," and is too often considered part of a young man's education and more or less necessary for his well being and advancement.

Medicine knows no such necessity and medicine teaches that a life of chastity is as normal in men as in women and is compatible with good health in both.

Dean Sumner also knows that syphilitics are frequently sterile, or if fertile their progeny are woefully unfit, and that such a person should never get married except possibly to one of his kind. The good Dean also knows that those with a drink or drug habit, a criminal tendency, with epilepsy or other mental warp, should not make any human being their bonded slave for life, and that to reproduce their kind is an offense against society and places a burden upon the state that runs on through the years indefinitely.

There are other diseases, such as tuberculosis, that should not be thrust upon another by matrimony and especially not upon the unborn, and the marriage of those of tubercular tendency should be supervised with care. The disease may not be hereditary but the hereditary type or tendency to tuberculosis is hereditary.

Under the new plan candidates for matrimony must have evidence of a true Jennerian vaccination scar, for scientific vaccination can not harm any one and it will positively prevent smallpox, and while smallpox is the most easily prevented of all the diseases which afflict mankind, it is the most contagious, most loathsome and most fatal of all diseases among the unvaccinated and leaves the faces of its survivors scarred for life.

The cause of public health and eugenics has been given a mighty

lift by the action of Dean Sumner. Marriages may not be numerous in the parish of the Dean for a short time, but those who are fortunate enough to be married in the cathedral SS. Peter and Paul will have done something of which they can be justly proud and will have something worth while to hand down to their children and their children's children. The cathedral may not have a monopoly of all the marriages of the fit, but it will be an honor to be married there and soon, we predict, will become quite the thing to do.

The discovery that tabetics, paretics, and several diseases of women that cause distressful and prolonged suffering and frequently require major surgical operations for their relief, are due to venereal diseases, is within the present generation. It is well known to the medical profession, to most clergymen, and others whose profession brings them in touch with sickness. The knowledge is also slowly gaining headway among the people generally but the masses are wholly ignorant of it. The stand taken by Dean Sumner and the publicity that it has had will set the public to inquiring into the why and wherefore of it.

The delicacy of the whole sex question has so far forbidden its discussion in popular and widely read publications. Now the news will spread and other clergymen will lend their valuable aid to the cause in one way or another.

When we have fully learned how best to prolong and make useful the life that God has given us and how not to inflict disease, infirmity or death upon others, perhaps we will be better able to understand the hope and the promise of the life that is beyond.

THE INSANITIES.

Dr. Bayard Holmes of Chicago has written a creditable book under the title "Friends of the Insane and Other Essays." The doctor makes a strong plea for the institution of thorough-going laboratories for the study of the insane, looking toward prevention as well as cure. He says: "We have seen yellow fever yield to the assault of well directed research founded on considerate theory. We have seen the long sought pathologic cause of syphilis come into the field of our microscope, and more than that, yield us an indubitable hemolytic test, and in the same decade surrender to a single dose of a specific remedy. We have seen, moreover, the sleeping sickness and kalaazar come from the fastness of the tropics and surrender to the cunning of wit and the strength of a mosquito bar. There are more reasons for investigating the sources of insanities that place a quarter of a

million of our citizens of every class in a hopeless public custody than there was for the study of these diseases of the tropics. As the problem of syphilis was solved with the solution of the sleeping sickness problem, so we may hope that by such methods as have been successful in remote or rare conditions, the ever present ignorance of the sources of the insanities may be dispelled."

The various states are urged to press the work with vigor but the author suggests, that "in the matter of research the friends of the insane who have resources could well initiate the investigation of the problems of the insanities by establishing scholarships in the great universities, with prizes for work done. It would be a worthy monument to a lost husband, wife, son, daughter, brother, sister, father or mother, to place in the hands of some university a helpful stimulus to the study of the physical basis of the several insanities.

ILLINOIS EXAMINATIONS.

The Illinois State Board of Health announce 214 failures out of 646 who took the examination of the board during the year 1911, for the purpose of securing license to practice medicine in the state. Out of 179 osteopaths who took the examination only 61 were successful. There were 54 medical colleges represented by the applicants but 41 per cent were from the three leading medical colleges of Chicago, Rush, Northwestern and P. and S. Of 178 midwives who took the board's examinations for license 131 were not successful.

The above indicates rigidity of the board in examinations and is a reflection upon medical teaching, while nearly 75 per cent of failures among midwives indicates a woeful lack of teaching.

DR. WILEY'S RESIGNATION.

Harvey W. Wiley, M. D., has resigned as chief of the government bureau at Washington in charge of the enforcement of the pure food law of the nation. Dr. Wiley assigned no reason for resigning but the opinion is general that he found his position intolerable because of friction with his associates and ranking officers. Whatever the truth may be as to the controversy, the sympathy of the people is with Dr. Wiley. The people believe he has stood between them and unscrupulous dealers. They believe he has stood for good quality and good measure in foodstuffs. They also believe there is a desire among many dealers in food, drugs and beverages to impose upon them goods that are adulterated, impure, misbranded and other-

wise deceptive and dangerous in character, and the large number of convictions obtained in open court by the food bureau is convincing proof that their belief is founded upon fact.

Exception has been taken to Dr. Wiley's position that benzoate of soda as a preservative in foods is harmful, even by scientific men of high repute and broad learning, and with their position we are inclined to sympathize. We feel that in this particular Dr. Wiley has been too vigorous. On the other hand, it is and has been within the power of Congress to determine to what extent benzoate of soda differs from salt, sugar, alcohol or other preservatives, and fit the law to the facts.

Dr. Wiley's character is of that wholesome, sterling, unswerving type that is admirable on the whole in one whose duty it is to administer the law. However, no law can be made that is elastic enough to fit all circumstances and all times, hence reasonable judgment is expected in all executive officers in administering the law.

That fact is that the Pure Food Law was enacted in haste in response to a popular clamor that was raised at the time. It was not given the thoughtful care that a matter so important should have had. In spite of this, the law has done great good. It has hurt the trade of some honorable concerns and has driven many dishonorable concerns out of business, and has been a protection to the pockets, the health and the lives of the people of the entire country.

The good that has come from the enforcement of the law, the people believe is due much more to the individual efforts of Dr. Wiley than to any other single individual, and in this the people are right.

Book Reviews.

SURGICAL OPERATIONS. A Hand-Book for Students and Practitioners. By Prof. Friedrich Pels-Leusden, Chief Surgeon to the University Surgical Clinic and Chief of the University Surgical Polyclinic in the Royal Charity Hospital of Berlin. Only Authorized English Translation, by Faxton E. Gardner, M. D., New York. With six hundred and sixty-eight illustrations. New York: Rebman Company. Price, \$7.00.

The author disclaims any pretension to so high a title, but his book certainly deserves to be called a text-book of operative surgery. Written in a careful, painstaking manner, with close attention to detail, it makes an ideal text-book for the senior student, particularly

in his operative surgery courses, and for the junior practitioner. Particular attention has been paid by the author to the description of the technic of the more common operations, those that would be most apt to fall to the lot of the man in general practice, although the specialist will find many points worthy his close consideration.

The translation has been most excellently done. The illustrations, mostly in the form of diagrammatic representation of points in technic, are very clear. Altogether it makes a most reliable textbook, one that can be cordially recommended to the profession. Its being published by Rebman Company is a guarantee that it is gotten out in the very highest style of the bookmaker's art.

TEXTBOOK OF OPHTHALMOLOGY. In the Form of Clinical Lectures. By Dr. Paul Roemer, Professor of Ophthalmology at Greifswald. Translated by Dr. Matthias Lanckton Foster, Member of the American Ophthalmological Society; Member of the American Academy of Ophthalmology and Oto-Laryngology. With one hundred and eighty-six illustrations in the text and thirteen colored plates. Volume I. New York: Rebman Company. Price, \$2.50.

It is a pleasure to have reviewed this first volume of "Textbook of Ophthalmology in the Form of Clinical Lectures." It is, I think, in fact the first volume of this type of textbook. It requires a student and an expert of Professor Roemer's ability to write such a work; and one may see at once how valuable such a system of promulgation of knowledge may be in such hands and how valueless it would be in the hands of any but a master. Certain it is that some such method will have to be inaugurated for all branches of medicine, since it is in the line of literary economics, a short cut to information without being categorical. Mental pictures are a valuable basis for comprehension, and for the reader to have a mental picture of the patient before him is such a distinct aid that those who read this book will appreciate its value by the ease with which it is possible to follow it. In fact, it is a pleasure to read the subject so presented, exhibiting, as the author does, enough but not too much detail.

In its arrangement, the author has shown real genius, and the translator is to be congratulated upon accomplishing well a difficult task. The frequent use of the word *can* where *may* would be much more refined English, and likewise the error of speaking of the blennorrhœa neonatorum as *extremely contagious*, may be excused on the ground of literal translation.

We conceive that the system employed in this book will have many followers among the teachers of ophthalmology. We shall look forward with much interest to the succeeding volumes, the first covering only the anterior segments of the globe. W. W.

L'INTERNATIONALISME SCIENTIFIQUE. (Science Pures et Lettres.)

By P. H. Eijkman, The Hague, Holland. With a Preface by Prof. Paul S. Reinsch, Roosevelt Exchange Professor, Madison (Wis.), Berlin. Published by the Bureau Préliminaire de la Fondation pour l'Internationalisme. The Hague, 1911.

This work on internationalism in science appears as the second in a series, of which "L'Internationalisme Médical" published in 1910, was the first number. Scientists have long felt the need of comparing among themselves the results obtained and the methods followed in the different countries, and this has led to the formation of many international organizations.

The present book will prove a veritable revelation as to the extent to which this movement has been carried and will surely prove of great practical service. A complete survey of the subject such as this pamphlet presents will enable one to form an idea of the various international societies that have already been organized. At the same time it will serve as a guide in the work which still remains to be accomplished if there is to be a really effective and satisfactory organization of scientific and intellectual labor throughout the world. The materials contained in the present volume are essential to the comprehension of the actual state of the movement, they form the practical foundation on which to consolidate the international organization of all scientific work.

SECOND REVIEW OF SOME OF THE RECENT ADVANCES IN TROPICAL MEDICINE. Being a Supplement to the Fourth Report of the Wellcome Tropical Research Laboratories at the Gordon Memorial College, Khartoum. By Andrew Balfour, M. D., B. Sc., F. R. C. P. Edin., D. P. H. Camb, and Captain R. G. Archibald, M. B., R. A. M. C., Attached E. A. In Collaboration with Capt. W. B. Fry, M. R. C. S., L. R. C. P., R. A. M. C., Attached E. A. and Captain W. R. O'Farrell, L. R. C. P. and S. I., R. A. M. C. Published for Department of Education, Sudan Government, Khartoum by Bailliere, Tindall & Co. American Representatives, Toga Publishing Company, 35 W. 33d street, New York City. Price, \$3.75.

This supplement to the Fourth Report of the Wellcome Research Laboratories deals in a general manner with tropical medicine as a whole and not merely with those diseases occurring in the Anglo-Egyptian Sudan. It becomes, therefore, a comprehensive record of the present knowledge in this important branch of medicine. The thorough manner in which the information collected concerning such subjects as malaria, beri-beri, cancer, leprosy, dengue, sleeping sickness, and many other diseases, has been arranged and indexed renders this book a most useful work of reference.

The publishers announce that the great cost of production of these reports, especially in their present voluminous dimensions, necessitates making a charge for them, but the price fixed is a moderate one and any profit made will be devoted to a special fund towards the cost of future publications of the laboratories.

CORRECT ENGLISH. How to Use It. A Complete Grammar.

THE CORRECT WORD. How to Use It. A Complete Alphabetical List.

CORRECT BUSINESS LETTER WRITING AND BUSINESS ENGLISH.

By Josephine Turck Baker. Published by Correct English Publishing Company, Chicago, Ill.

We recommend the three books listed above to all who are interested in the correct use of the English language. These are not comprehensive treatises on the history of language, they do not even quote the authorities that govern the various decisions, neither can they be taken arbitrarily as fixed standards. But they do give in plain and concise language and arrangement, a presentation of what constitutes correct English as established by custom and usage today.

The grammar gives a plain statement of the rules governing the forms of our language, and follows this up with a number of valuable exercises and drills in the application of these rules.

"The Correct Word" contains an alphabetical list of words and phrases which are likely to be misused, calling attention to the proper form or spelling or construction.

"Business English" is especially adapted for the use of stenographers and typists, and would be a valuable addition to the office equipment of any professional man.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles. By Leading Members of the Medical Profession Throughout the World. Edited by Henry W. Cattell, A. M., M. D., Philadelphia, Pa. Volume I.

Twenty-Second Series, 1912. Philadelphia: J. B. Lippincott Company, 1912. Price, \$2.00.

An exceedingly interesting number of this valuable series. The articles dealing with the more practical points of practice are fully up to the average, and we have in addition dissertations upon subjects lying within debatable ground, or those that open up new outlooks for the future. Flexner has a timely article under the caption of "Experimental Poliomyelitis," in which he gives a resumé of all the more recent work on this most important subject. Meyer Solomon of the Government Hospital for the Insane at Washington, has a thesis upon the "Science and Practice of Eugenics," in which he presents within limited space as thorough and understandable a definition of the theories and aims of the science of race culture as we have seen. Parkes Weber records two strange cases of Functional Disorder and uses them to adduce further evidence in support of his theory of the evolutionary basis of hysteria. One of the most valuable contributions to this issue is "An Account of the College of Physicians of Philadelphia," by its president G. E. de Schweinitz, its origin, its history down to the present, particularly in reference to its various abodes, and a description of its present magnificent home,—it is quite fully illustrated.

The book ends with a resumé of the progress of medicine during 1911 by A. A. Stevens, Edward Watson and Lucius W. Johnson, a concise but complete statement of the various advances, new theories, experimental work, therapy, etc. *International Clinics* is a work that is certainly valued highly by every possessor.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and *Materia Medica* in the Jefferson Medical College, Philadelphia. Assisted by Leighton F. Appleman, M. D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. Volume XIV. No. 1. March, 1912. Published quarterly by Lea & Febiger, 708 Sansom street, Philadelphia. Subscription price, \$6.00 per annum.

This publication is one of the few that are really indispensable to the physician who wants to keep well posted in the advances made, as well as to the writer or laboratory investigator who must keep constantly in touch with the work of others in his own particular field. Its quotations are exact, its references always accurate, and its comments carefully considered.

The volume for the first quarter of 1912 contains "Surgery of the Head, Neck and Thorax," by Chas. H. Frazier; "Infectious Diseases," by John Ruhrah; "Diseases of Children," by Floyd M. Crandall; "Rhinology and Laryngology," by D. Brader Kyle; and "Otology," by E. B. Duel,—the completing feature being a full and comprehensive index. It is undoubtedly the most valuable record published in English of the advancement made in medicine.

AN INTRODUCTION TO EXPERIMENTAL PSYCHOLOGY. By Charles S. Myers, M. D., Sc. D. Lecturer in Experimental Psychology in the University of Cambridge. Cambridge: At the University Press, 1912. American representatives, G. P. Putnam's Sons, 2-4-6 West 45th Street, New York. Price, 40c.

HEREDITY. In the Light of Recent Research. By L. Doncaster, M. A. Fellow of King's College. Cambridge: At the University Press, 1912. American representatives, G. P. Putnam's Sons, New York. Price, 40c.

LINKS WITH THE PAST IN THE PLANT WORLD. By A. C. Seward, M. A., F. R. S. Professor of Botany in the University of Cambridge. Cambridge: At the University Press, 1912. American representatives, G. P. Putnam's Sons, New York. Price, 40c.

No more interesting or useful series of books has been put before the public of late years than this which is now in course of publication by the Cambridge University Press. The specialist whose time is completely occupied with his own work regrets that he can not be fully abreast of the times in many other subjects. He feels that he must be dropping behind on many topics. The business man, thoroughly engrossed with affairs, reads in his newspaper of the wonderful advances along scientific or other lines of investigation and regrets that he has not the time or the technical knowledge necessary to enable him to become more fully conversant with such subjects.

It is for people such as these that books of this character are invaluable,—of small size, condensed yet clear, taking up a single subject or even a subdivision along the line of which advance is being made. In a most interesting lucid way they put the reader in possession of all that has been accomplished, put him fully abreast of the most recent thought and experiment.

Write G. P. Putnam's Sons, New York City, for a list of the titles in this series,—those already issued and those in course of publication. We feel convinced that each person will find many subjects

on the list that will appeal to his individual interest and arouse a desire for further information along certain lines.

HOME HYGIENE AND PREVENTION OF DISEASE. By Norman E. Ditman, M. D., New York: Duffield & Co., 1912.

There was a time when books upon domestic medicine were within limited scope, of undoubted benefit, but that time has passed and today, instead of being a benefit, they unquestionably are harmful, by suggestion if in no other way. But a modern type of the old treatise upon domestic medicine has appeared in the form of books upon popular hygiene, and one of the best of this class that we have seen is this book by Dr. Ditman. He has adopted a novel but practical form of presenting his subject. It is arranged in alphabetical order, each disease coming under its appropriate heading, its character discussed in plain language. Then the questions of prevention and treatment, so far as hygienic measures go, are carefully explained in terms understandable by any one with an ordinary school education.

It is a book capable of doing a great amount of good anywhere, particularly in localities where ready access to popular lectures, etc., can not be had. It should be recommended by practitioners generally to their patients.

BOOKS RECEIVED.

TWENTY-SEVENTH ANNUAL REPORT OF THE BUREAU OF ANIMAL INDUSTRY FOR THE YEAR 1910. U. S. Department of Agriculture. Washington: Government Printing Office.

TRANSACTIONS OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA. Third Series. Volume the Thirty-Third. Philadelphia; Printed for the College, 1911.

DIGEST OF COMMENTS ON THE PHARMACOPOEIA OF THE UNITED STATES OF AMERICA. (Eighth Decennial Revision), and on the National Formulary (Third Edition) for the Calendar Year ending December 31, 1909. By Murray Galt Motter and Martin I. Wilbert. Hygienic Laboratory Bulletin No. 79. January, 1912. Public Health and Marine Hospital Service of the United States. Washington: Government Printing Office.

CHEMISTRY OF SANDALWOOD OIL.*

With Special Reference to Santalol Lactate.

By FREDERIC S. MASON, Ph.G., M.D.

Santalol, in two isomeric forms, occurs as the alcohols of the East India sandalwood oil, and is recognized by all therapeutists as the chief active component of this oil. The older pharmacopeias have been content to establish a standard based on the specific gravity and solubility in alcohol, but the present U. S. P. requires 90% of santalol and states "the oil is laevogyrate—its angle of rotation should not be less than -16° nor more than -20° in 100 Mm. tube, at a temperature of $25^{\circ}\text{C}.$ " This differentiates the true oil of the *Santalum Album* (N. O. Santalaceae) from that derived from species of sandalwood or adulterated with cedar and other spurious oils.

Chapoteaut, in 1879, read a paper before the Paris Société de Chimie, and was the first to call attention to the fact that the so-called steroptene (sandalwood oil) was not a definite chemical product but was composed chiefly of alcohols, from which he was able to make a series of esters with appropriate acid anhydrides. The formula of the santalol he then referred to, he determined to be $\text{C}_{18}\text{H}_{26}\text{O}$. He also isolated another body, to which he ascribed the $\text{C}_{18}\text{H}_{24}\text{O}$, and these findings were verified by Chapman & Burgess. (Proceedings of the Chemical Society, London.) Parry followed up Chapoteaut's work some years later, and Continental chemists have since shown that the pure oil is chiefly composed of a mixture of two isomeric sesquiterpene alcohols together with santolols. Guerbet speaks of an alpha- and beta-santalene, which both combine slowly with glacial acetic acid when heated in sealed tubes. The hydrochlorides $\text{C}_{18}\text{H}_{24}\text{HCl}$, have an optical rotation in the opposite direction to the sesquiterpenes, that of the alpha-santalene hydrochloride being $6^{\circ} 1'$, and that of beta-santalene hydrochloride 8° . Alpha-santalene gives only one crystalline nitrosophchloride at $122^{\circ}\text{C}.$, and is insoluble in alcohol. Beta-santalene gives two isomeric nitroschlorides, both of which are soluble in alcohol. The two santalols, isolated together from other constituents of the oil as phthalic esters, can only be separated from each other after saponification by fractional distillation under reduced pressure. Thus obtained, the alpha-santalol boils

*Abstract of a paper read before the American Chemical Society, May 5th, 1911, entitled "The Lactic Ester and other Santalol Compounds."

at 300°-301° C. (as pointed out by Chapoteaut in his first paper on this subject), has a density of 0.9854 at zero centigrade and a rotation of $-1^{\circ} 20'$. Beta-santalol boils at 309°-310° C. and has a density of 0.9868 at 0° C. and the rotation is -56° . Dehydrating agents, such as acid potassium sulphate or phosphoric anhydride, remove a molecule of water, converting them into their respective isosantalenes $C_{18}H_{24}$. Alpha-isosantalene boils at 259°-260° C., so that as Chapoteaut pointed out, the alpha and beta compounds approach very nearly to the empirical formulae of copaiba and cedar. Hugo and Soden have also given considerable time to the examination of sandalwood oil. F. Muller, experimenting on the oil, claims to have isolated a new terpene $C_{15}H_{24}$, which he calls santene. This has a Sp. gr. of 0.871, and boils between 139°-140° C. It forms two polymeric crystalline nitrosochlorides, one blue and the other colorless. It also gives a solid hydrochloride melting at 80° C., thus conforming with the reactions of other terpenes. This terpene is probably derived during distillation from teresantallic acid, since when that acid is heated under a reflux condenser, CO_2 is found to be given off and on distilling, santene is obtained. Muller also found a ketone, santalone $C_{11}H_{16}O$, boiling at 214°-215° C., isomeric with jasmone.

In order to determine the composition of sandalwood oil, the following synopsis of the process may be found of service.* The sulphuric test, solubility in alcohol, specific gravity and other elementary tests having been applied, the ethers are saponified by boiling with KOH, taking five kilos of oil, 200 grammes of KOH and 500 c.c. of alcohol (90%). The product is diluted with water, the separated oil washed and alkaline liquid retained for identification of the organic acid. The oil after washing and drying with anhydrous K_2CO_3 , is distilled under pressure and fractionated with a Le Bel Heninger apparatus. Two groups of fractions are thus obtained, viz., those passing at 110°-180° C., and a second group passing at 180°-200° C. The residue left is yellow, resinous and honey-like.

The hydrocarbons are refractionated several times under reduced pressure and finally under atmospheric pressure; lastly, the different fractions are rectified over sodium, thus isolating two principal fractions, viz.: those boiling at 252°-255° C. (the alpha-santalene), and 261°-262° C. (beta-santalene). The fraction boiling below 252° C. contains a hydrocarbon boiling at 130°-140° C. and an oxygenated product boiling at 210°-220° C., both of which have

*Comptes Rendus, 130, 417.

the powerful and agreeable odor to which the odor of sandal oil is due.

The fractions distilling at 180°-200° C. (38 Mm.) contain 97 per cent of the alcohols. The mixture is warmed at 120° C. for two hours with the calculated amount of phthalic anhydride, which converts the alcohols into their acid phthalic esters, and the product is treated in the cold with carbonate of soda solution, in which it completely dissolves, leaving only a little unacted on phthalic anhydride. This aqueous solution of the ethereal salts is freed from any non-alcoholic bodies by repeated extraction with ether; finally the ethers are saponified by heating with soda under a reflux condenser, the liberated alcohols washed, dried with K_2CO_3 and fractionated under reduced pressure. This should yield an oily, colorless liquid distilling at 183°-197° C. (37° Mm.), which has not yet been separated into fractions having constant boiling points; the rotations of the fractions also differ, varying from 9°.4 to 25°.3. Therefore the alcohol known as santalol is probably a mixture of two alcohols of differing rotatory power, and corresponding to the santalenes "a" and "b," whose rotatory powers are respectively, 13°.98 and 28°.55.

To summarize, the following definite compounds have been isolated from sandalwood oil:

1. Two hydrocarbons—(sesquiterpenes) $C_{15}H_{24}$; santalenes "a" and "b"; oily colorless liquids, with feeble odor and a sweet burning taste. Santalene "a" boils at 252°-252.5° C.; (a) $D_{13.98^\circ}$, sp. gr. at 0°=0.9134. Santalene "b" boils at 261°-262° C.; (a) $D_{28.55^\circ}$, sp. gr. at 0°=0.9139.

2. A mixture of sesquiterpene alcohols corresponding to the above hydrocarbons; these are the santalols "a" and "b."

3. An aldehyde of the formula $C_{15}H_{24}O$, a colorless oil with a strong and peppery odor; boiling point 180° (40 Mm.)

4. An acid $C_{15}H_{24}O_2$ —santallic acid, a viscous colorless liquid boiling at 210°-212° C. (20 Mm.), insoluble in water and in strong ammonium carbonate solution; soluble in alcohol, ether or chloroform.

5. An acid in large prismatic needles, of the formula, $C_{16}H_{14}O_2$, —teresantallic acid, obtained by cooling its alcoholic solution, melting at 157° C.; boiling at 183° C.; (28 Mm.)

6. Lastly, the more volatile portions of sandalwood oil include every odorous compound not yet isolated in a state of purity; whilst their amount is very small, it is to their presence that the oil owes its odor.

The average proportions are as follows:

Santalenes "a" and "b".....	60
Santalols "a" and "b".....	800
Santalal	30
Acids in the state of esters (formic, acetic, santalic, teresantalic)	30
Undetermined strongly odorous bodies boiling at 130°-220° C..	3
Undetermined products boiling about 320° C. (hydro-carbons, alcohols, ethers, resinous products).....	77

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In "Some Notes on Sandalwood Oil," read before the British Pharmaceutical Conference, London, July, 1900, E. Parry* says:

"Since publishing a paper some few years ago, showing that it consisted in the main of bodies of an alcoholic nature, several chemists have devoted themselves to the subject, notably Guerbet, Sodet and Muller, and Messrs. Schimmel & Co.'s chemists, but the results I have obtained differ in a few details. The main result at which I have arrived is that the so-called santalol, which I previously showed existed to the extent of 90 per cent in sandalwood oil, is a mixture of two, and possibly more, bodies of an alcoholic nature."

From a series of examinations, made by Soden and Muller, the following constants are generally accepted for pure sandalwood oil:

Specific gravity	0.975 to 982
Optical rotation	16° to 20°
Refraction index.....	Not below 1.5030
Santalol (total).....	At least 90 per cent
Esters as santalyl acetate.....	4 to 6.5 per cent
Rotation of first and second fractions of 10 per cent..	Not below 16°

It should be soluble in five volumes of 70 per cent alcohol.

Sandalwood oils found on the drug markets of London and the Continent are now sold with a guarantee of 94 per cent of santalol, but this guarantee should not be taken too seriously since repeated examinations of various brands show that they vary between 90.9 and 93.6 per cent of santalol with from 1.5 to 6 per cent of the esters of santalol. These variations explain the variable specific gravity of the oils found in commerce. The U. S. Pharmacopoeia gives the specific gravity as .965 to .980 at 25° C. Occasionally an

*Adulteration of Sandalwood Oil, by E. J. Parry, B. Sc., F. I. C., and C. T. Bennett, B. Sc., F. C. S. (Chemist and Druggist, July 6, 1907).

oil is found which gives as high as 98 per cent of santalol. We see, therefore, that the requirements of the U. S. P. are moderate and allow for some variation in the percentage yield.

Since the santalols are chiefly responsible for the medicinal effects of sandalwood oil, it is with these definite products that we have chiefly to deal. Sandalwood oil and santalol, however, are not well tolerated by most patients and chemists have, in recent years, attempted to form compounds with those alcohols in order to obtain less irritating esters, while retaining their beneficial medicinal effects. Many processes for making these have been patented, the claims being that santalol esters and other santalol compounds are better tolerated and less objectionable in taste than the oil, while their therapeutic activity is retained. The general principle for the production of these esters is to act on the santalol with an anhydride. Solid esters in fine white crystalline needles, such as the santalol ester of allophanic acid, containing 72 per cent of santalol, have been obtained. The aromatic esters of the monobasic acids, however, are the best known, and amongst the rather long list, the following have had a passing notice and are used to some extent: Santalol benzoate, salicylate, cinnamate, carbamate, succinate; a phosphate has also been obtained.

As these santalol compounds are incompatible with alkalis, the theory of their activity is based on the fact that the alkalinity of the duodenum breaks them up, liberating nascent santalol. The therapeutic dose, however, requires to be increased according to the molecular weight of the ester. These compounds of santalol are known under various trade names and need not enter into the discussion.

For medicinal use, we should look for such a compound as will not interfere with the gastrointestinal digestive processes. This is best realized in the lactic acid ester of santalol, which represents 69.74 per cent of pure santalol. It has the advantage of being more agreeable to the taste than sandalwood oil or santalol, it is well tolerated and can be administered in the form of capsules of five minims each. Like other lactates, it is completely consumed in the economy with formation of CO_2 and water. It renders the urine somewhat alkaline, diminishes the overstimulation of the renal parenchyma and prevents the pain in the back so often complained of by patients to whom sandalwood oil is administered.

While lactic acid does not react directly with santalol, its primary and secondary anhydrides (so-called lactid), do so under cer-

tain conditions, and a patent has been granted for the process of its manufacture in the United States, Germany, France and England. In practice, this is obtained by first driving off from syrupy lactic acid, 25 per cent of its compound with water, leaving the primary and secondary anhydrides, the dilactic anhydride of Pelouse, which is solid at 25° C.

In practice, it is necessary to use a slight excess of the lactid over and above the theoretical combining molecular weight, which leads to some difficulty in purification of the final product and is one of the essential points of the patent, for the lactid is exceedingly bitter and disagreeable to the taste and can only be removed from the performed santalol lactate with difficulty. Primary and secondary lactic anhydrides, therefore, are placed in contact with the santalol, in the molecular proportions necessary for chemical combination and heated in a partial vacuum at a temperature not exceeding 130° C., and then all the uncombined lactid eliminated, in order to obtain a product as pure as possible.

The following is one of the processes adopted by the patentee, and this yields a santal lactate of from 92 to 95 per cent, purity depending on the per cent of santalol in the oil used. Sandalwood oil 1,100 grams (equivalent to 1,000 santalol) is placed in a flask attached to a Liebig condenser with a quantity of lactid slightly exceeding the theoretical combining weight.

Heated under reduced atmospheric pressure to 108-110° C., a primary reaction occurs with ebullition. The temperature is then gradually raised to 125-130° Cent., when a more violent secondary reaction takes place. The temperature is maintained at 130-135° C. for twelve hours. There is no distillate. The contents of the flask are then boiled repeatedly with distilled water for several hours to remove the bitter taste of the excess of lactic anhydrid present.

The product is then washed with a 1 per cent solution of NaHCO_3 , then with 1 per cent HCl ; again with distilled water until it gives no opalescence with AgNO_3 , filtered and estimated for the proportion of combined santalol and lactic acid.

News Items

For Rent.—Hours in 1017 and 1018 Venetian building. Dr. John E. Owens.

Wanted.—Microscope for general work. State condition and price. Address L 22, care of Chicago Medical Recorder, 804 Pullman building.

To Rent.—May 1st. Large room with small second room, completely furnished; connected with reception room and private exit. Low rent. Hours, morning to 1 p. m., and after 4:30 p. m. Address Dr. J. C. Friedman, 1305 Heyworth building, 29 East Madison street.

For Rent.—Very desirable hours in a newly equipped suite, 1302 Columbus Memorial building, 31 North State street. Inquire of tenant.

Office Removal.—Dr. Rudolph W. Holmes announces the removal of his office to the Peoples Gas building, 122 South Michigan avenue. Telephone Randolph 1609. Consultation 2:30 p. m. by appointment.

For Rent.—The house 2023 Washington boulevard, 16 rooms, garage, etc., and if desired also the adjoining house, suitable for private hospital; for rent to physician. Long lease. Alterations made to suit. Address Mr. B. Singer, 2023 Washington boulevard.

Personal.—Dr. George W. Webster has been unanimously elected president of the State Board of Health for the ensuing year. He has also been named a delegate to the International Congress of Hygiene and Demography which meets at Washington, D. C., in September, 1912.

Dr. James A. Egan will remain in office as secretary of the State Board of Health.

Free Treatment for Crippled Children.—Dr. John Ridlon will examine and advise the crippled children of the deserving poor at his office on Sunday mornings at ten o'clock. Patients should bring letters from their family physicians stating that they are worthy of free treatment. 7 West Madison street, Chicago Savings Bank building, corner of State and Madison streets.

American Medical Editors' Association.—The annual meeting of the society will be held at Atlantic City, New Jersey, on June 1st and 3d with headquarters at the Marlborough-Blenheim Hotel. Dr. Thomas L. Stedman, editor of the Medical Record, will preside and an attractive program is being prepared. The annual banquet will be held on the evening of June 3d. Every editor and those associated in medical journalistic work will find this meeting worth attending.

Chicago Medical Directory.—The new edition of the Chicago Medical Directory, so well known that it is familiarly called "The Blue Book," is to appear early in July. The 1912 edition will again contain the STREET list of physicians and druggists, as there has been a general demand that this be resumed. The Directory of Physicians has been enlarged and now includes Cook County.

These changes add much to the value of the directory and no physician can well afford to be without a copy. The subscription price is \$2.50 with a discount of 50 cents where cash accompanies the order.

Remember this edition will contain a list of medical societies, together with their officers, a list of hospitals and sanitariums with their medical staffs, etc., a list of medical schools and colleges, an alpha-

betical list of physicians of Cook county, also an alphabetical list of druggists of Cook county, and the Medical Fee Bill, also the reincorporation of the Physicians' and Druggists' Street Directory.

Send orders to McDonough & Co., 154 W. Randolph street, Bank floor, Chicago. Telephone Franklin 126.

Dr. Carl Strueh's Sanatorium.—We wish to advise our readers that Dr. Carl Strueh's Sanatorium and Health Resort at McHenry, Ill., has been opened for the summer season.

The institution is to be recommended as an ideal place for convalescents as well as for such patients as require physiologic therapeutics, which are applied at the sanatorium in a thoroughly scientific manner. The sanatorium has the advantage of being only one hour's ride from Chicago. The attending physician may thus keep his patient under his case and rest assured that his instructions as to diet, baths, massage, sun-bath, exercise, etc., are carried out conscientiously.

Tuberculous and mental cases are not received at the institution. The sanatorium enjoys an absolutely private location and comprises twenty acres of ground, with a beautiful grove along the shore of Fox River. It is built on the cottage plan. The patients, therefore, are living a permanent out-door life. The food served at the sanatorium is good and wholesome.

For any information as to rates, etc., apply to Dr. Carl Strueh (1400 Reliance building).

Greater New York Number of the American Journal of Surgery.—In June the American Journal of Surgery will issue a number composed of original contributions from men of recognized prominence in the medical profession residing in Greater New York. Among those to contribute are Herman J. Boldt, C. N. Dowd, Meddaugh Dunning, Wm. S. Gottheil, E. L. Keys, Jr., Howard Lilienthal, Chas. H. May, Willy Meyer, Robt. T. Morris, S. Lewis Pilcher, John O. Polak, James P. Tuttle, James P. Warbasse and others.

Contributions from these well-known men should make this issue of particular interest and value.

Death of Well-Known Rockford Physician.—After a lingering illness Dr. Russell Broughton of Rockford, Ill., died on the morning of April 4th. Dr. Broughton was born at Racine, Wis., in 1842. He graduated from Rush Medical College, Chicago, in 1869 and for some years practiced at Brodhead, Wis. After ten years spent at the Keeley Institute at Dwight, Ill., and a short period at the Ransom Sanitarium in Rockford, Dr. Broughton in 1902 opened the present institution which bears his name. He has maintained an excellent sanitarium which has done good work in restoring many unfortunate alcohol and drug addicts to health and usefulness. This sanitarium in recent years has been conducted by a corporation and it will be continued along the present lines under the management of Dr. D. A. Weirick, who has been associated with Dr. Broughton for over four years.

Personal.—Colonel L. M. Maus, who has been stationed in Chicago for the last two years as chief surgeon of the central division, United States Army, has been transferred to Governor's Island, New York Harbor, New York.

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Original Articles.

THE CAT AND THE TRANSMISSION OF DISEASE.*

By CAROLINE A. OSBORNE, M. D., WORCESTER, MASS.

The writer has been studying the association of the cat and spread of transmissible diseases since 1904. Material gathered during 1904 and 1905 was published in 1907 (2). Developments since that time strongly indicate the need of immediate recognition of the fact that the cat may be, and often is the channel through which infection reaches home. The present paper will recapitulate the former, and briefly bring the subject up to date. This presentation, as was the former, is written solely from the point of medical biology.

We are more than ever appreciating the facts that the problems involved in the prevention of disease are fundamentally of a biological character. The rise, progress and decline of any disease due to a specific organism is due to the period of growth and decline of the specific organism of the disease in question.

Everywhere science demonstrates that all forms of animal life, living with man, may become infected with human disease organisms, and may transmit these organisms to each other and to man. In the process they may or may not contract the disease themselves; and may or may not increase or decrease the virulence of the disease organisms in their passage through the animal host. The problem as formulated by Dr. Theobald Smith (27), is thus stated, "How far does nature utilize animals as a workshop for preparing bacteria to act in a pathogenic role upon the human race?" He concludes: "There

*From the Biological Department, Clark University, Worcester, Mass., 1912.

2. The Cat: A Neglected Factor in Sanitary Science. Pedagogical Seminary, Vol. 14, No. 4, pp. 439-459. December, 1907. Worcester, Mass.

is evidently some physiological relation between man and the rat, as disclosed by the bubonic plague; between man and the horse, as disclosed by the bacillus of glanders. . . .

"Some writers believe in a relationship between man and certain domestic animals, as in case of scarlatina. More general relationships are established between larger groups of animals by anthrax and rabies.

"If we go a step farther into a less cultivated domain, *we can readily think of other possible relationships between human disease and animals in which the causes of human disease may live without producing any recognizable disease. We can neither dispute nor affirm such relationship because we know comparatively little, if anything, of the pathogenic organisms which thrive, say, upon the mucous membranes of horses, cats, dogs, rats, mice, and certain birds which enter so largely in the daily life of man both young and old.*" (The italics are the writer's.)

Cohen's (3) System of Physiological Therapeutics, p. 144, states that—"The domestic animals suffer from a number of diseases transmissible to man, and may also convey pathogenic organisms to man, without themselves being affected. This may occur in various ways as follows: 1. Direct contact. Most of the human parasitic skin diseases occur in the dog, cat, and horse, and are transmissible to man by contact. 2. Inoculation. The most important disease inoculated by the bites of animal is rabies. This occurs most frequently in the dogs but may affect cats, horses, cows, and other domestic as well as wild animals. 3. Aerial Infection. 4. General contagion. By various methods, e. g., directly through contact of fondling and play; and possibly indirectly through the soiling of furniture, carpets, and garments, domestic animals, especially pets, as cats, dogs, rabbits, etc., may convey to human beings the ova of parasites, developed parasites, as the itchmite; or the germs of specific diseases as influenza, diphtheria, and possibly scarlet fever and other epidemic affections. The animal may itself suffer with the disease transmitted, or it may be merely a mechanical conveyor of the germs, or as already set forth—it may convey fleas or insects which may cause the infection in any of the ways discussed." Again, "Domestic animals, especially house pets, are proverbially responsible for many cases of transmission of contagion, as are also the homeless cats and dogs, so common in cities, which should not be overlooked in local quarantine." In this connection, Nuttall, at the close of his article, "On the Role of Insects in Disease," etc., comments, "it is almost superfluous to add that house dogs should be kept clean."

Medicine at the present time, is most active in the pursuit of measures which will prevent the occurrence of disease. State and City Boards of Health are daily notified of the presence of a great number of transmissible diseases. An elaborate system of isolation of patients ill with communicable diseases has been evolved.

Yet, in spite of all efforts to eradicate and restrict disease, cases persist, and every little while, an epidemic arises, the source of which is as much a matter of speculation to us as the conditions of its growth are beyond our knowledge.

Chapin (2), in his recent book on "Sources and Modes of Infection," in discussing this aspect of the question, remarks, "There is evidently some source which escapes control. . . . We are forced to conclude that there is some defect in our procedures, or some other source of infection more important than that recognized in the cases." . . . After discussing the importance of carriers and missed cases, Chapin concludes: "It appears to be in the highest degree probable that in times of outbreaks, as well as in inter-epidemic periods, the chief factor in the extension of the disease is the existence of unrecognized infection in human beings, or, in some diseases, in the lower animals."

As one reads the careful and minute directions given by the modern monographs and textbooks for the gowning, gloving, cap-muffling and booting of the physician as he makes his call on the patient ill of some acute transmissible disease, it would seem as if no avenue of infection had been overlooked.

As one watches the family cat roam over the house, going from sick to well with seldom a thought given her as a carrier of infection, one is surprised that more infection does not follow. As the same cat is further kept under observation, she may be seen going to a neighbor's house, where she is usually welcomed and made a playmate for the children. Here is a broken link in the chain of isolation and quarantine that is either thoughtlessly or wilfully ignored—and either supposition is an arraignment of methods of preventive medicine.

A few isolated workers are recognizing the danger of infection carried by the cat, and there is a growing recognition of the fact that animal pets of all kinds may be sources of infection. Personal letters to the writer from two different State Boards of Health recently have stated that the cat might well be one avenue of infection. There is urgent need of investigation of this phase of preventive medicine.

One great menace from the cat lies in the large number of stray cats, so called "alley cats," outcasts from both feline and human society and so inevitably are out of their normal environment, the home, to which the cat has domesticated herself. This large number of tramp cats is really a municipal question of major importance.

In New York City, in the first nine months of 1905, the American Society for the Prevention of Cruelty to Animals killed 53,983 cats. The figures for nine years prior to 1903 are 468,065, according to Bird Lore. Other large cities report great numbers killed in the same way. In England, in regard to the formation of the Society for the Protection of Cats, the statement is made—"the society has been recently formed, and it is confidently hoped it will enlist the sympathies of all humane people, whether lovers of cats or not. The innumerable cats that are starving and homeless in London is a disgrace to our community, besides being the means of spreading disease. The carelessness and willful neglect which causes our streets and gardens to be thus overrun should be punishable."

The Animal Rescue League in Boston during the two years ending December, 1911, reports cats received and disposed of as follows:

	Received.	Stray.	Owued.	Destroyed.
1910.....	23,089	13,968	9,121	22,385
1911.....	23,691	14,105	9,486	22,529

Other cities duplicate these conditions, and nowhere is there evidence of any attempt on the part of any one in authority to do anything to prevent this multiplication of the domestic cat in such numbers that living becomes intolerable for them, as well as for the human environment. Animal Rescue Leagues can and do kill the surplus, but where is the agent to prevent the surplus? It would be far more humane to prevent the multiplication beyond the demand, than it is to catch and kill animals that often have known only hardship all their lives. When the cat is under as much legal restraint as the dog, we shall have a far better protected cat, and one great problem of our humane societies will be partly solved.

The cat is the most widely distributed of all household pets. It is deeply enshrined in the affection of the child, the adult and the race. For some nationalities it is still the sacred animal and is yet worshipped.

For all of us, though it is still "the cat who walks by herself," it is omnipresent in the land and in every home that will tolerate or welcome its presence.

In the home it shares the family life of adult and child alike. A well cat usually receives much care and a sick cat may receive yet more. It often happens, however, in the stress of busy family life, that a sick cat may escape observation, and really suffers more from lack of proper care than her less luxuriously surrounded "alley" sister.

If illness occur in the family, too often the cat is used as a means of diversion by both child and adult. Such a cat, when exposed to contagious disease, inevitably conveys infectious material with her as she wanders about. In fact, the cat is so close to the center of the home that she may literally be considered her human brother's keeper.

The habits of the family cat are well known. Her constitutionals include large areas—even in the city. She is a universal scavenger, bringing as proudly dead and decomposing birds and mice as freshly caught. Commenting on such facts, J. Woodbury Hill says, "Many morbid and contagious feline diseases arise from scavenging. Cats left to forage for themselves will pay visits to refuse tubs or other obnoxious receptacles, not only to their own danger but also that of the human family, numerous instances of which are on record.

The most daintily cared for family cat will unconcernedly roll again and again in the dirt, no matter whether it be street dirt, an ash pile, or a dump heap.

The cat, in her careful disposal of excreta, covers it with dirt, particles of which adhere to her feet as she goes about. Her feet also often become soiled with excreta, and thus her scratch may have a two-fold source of infection with which to inoculate her often innocent victim. It is a widespread observation that the bite of a cat is often followed by virulent infections. When one watches the cat performing her ablutions, and spreading her oral protégés promiscuously over her entire body, and then watches the baby, encouraged by mother, hug and caress "kitty because she is all cleaned up," the link in many a "mysterious dispensation of Providence" is apparent.

Chapin (2), in discussing the spread of disease by saliva, comments on the universal habit of touching the lips and then articles of all kinds, with the result that by the end of each day "this secretion is freely distributed to the doors, window sills, furniture and play-things in the house * * * and indeed upon everything that the hands of man touch. * * * Children have no instinct of cleanliness, and their faces, hands, toys, clothing and everything they touch must

of necessity be continually daubed with the secretions of the nose and mouth. It is well known that between the ages of two and eight years children are more susceptible to scarlet fever, diphtheria, measles and whooping cough than at other ages, and it may be that one reason for this is the great opportunity that is afforded by their habits at these ages for the transfer of the secretions."

The cat as a warm blooded animal has many structural modifications similar to the human organism. She has adapted herself to her human environment and manner of living since the dawn of history. It is probable she will be in a measure susceptible to the same diseases as the human race when she is exposed to such diseases. If the theory of evolution be accepted as it stands today—the present evolution of life forms must also be accepted. The cat has been exposed to diseases simultaneously with man:—if we can infer that she has, as man has, become immune to certain diseases by the same processes of individual elimination and adaption, we must also infer that to others she may be even more susceptible. The dread inquiry meets us at every turn—"Is she a host through which some of these diseases increase their virulence for mankind?" Pasteur answers this affirmatively in the case of rabies. Osler says, "In order of decreasing severity of hydrophobia comes the wolf, cat and dog."

Mohler and Washburn (29), studying the morphology of tubercle bacilli, found that "a tubercle culture isolated from sputum was given a more perfect so-called 'human' morphological character than it originally possessed by passing it through cats. The same culture was given a perfect so-called 'bovine' morphological type by passing it through cattle. A culture from a tuberculous boy was found to be morphologically a bovine type; after fifteen generations on artificial media it was still a bovine type. By passage through cats it became, morphologically a human type."

To diseases, changed or changing in character, the cat may be still undergoing a process of slow immunization by individual elimination, similar to man. Bacterial and other disease organisms are slowly evolving changed modes of life to fit changed conditions. Many allied groups of bacteria, pathogenic in nature, cause disease in all the various domestic animals. Some of these organisms are also frequent parasites of normal mucous membranes of healthy domestic animals, including the cat and dog. Certain of these groups are at times the causes of dangerous diseases in cattle, though seemingly having little power to attack man. For the farmer, the question of infection harbored, increased and propagated by the family cat, is

thus of direct economic importance. We have bacteriological as well as clinical evidence showing the cat is subject to both tuberculosis and diphtheria. Both these diseases are of direct interest to the milk producer, as they are so frequently traced to infected milk routes and dairies (9).

The cat on the farm is an almost universal fact. Even when not allowed in the house, the "barn cat" is a supposed necessity to keep the rats in check, and who is there who has been on a farm at all, who has not seen the cat surreptitiously helping herself from the foaming milk pail?

The principles of modern aseptic surgery have demonstrated that the perfect removal of dirt, by scrubbing with hot water and soap, is also as effective in the removal of disease organisms (18). It is also well established that the methods of household laundries, with their boiling, sun drying, and ironing, are such sufficient germicides that these articles, freshly laundered and uncontaminated, can be used for surgical purposes even, if necessary, without further preparation and with perfect safety. But if after all this care, the family cat comes along and takes her nap on them, what is the condition? "Dirt" is practically refuse of various kinds, including excrement. This, dried and pulverized, is blown everywhere by winds and carried mechanically by clothes, feet of animals, etc., into the house at various times. Disease will not follow contact with dirt in itself. Disease organisms must be present to cause disease. The question, therefore, is—what organisms, pathogenic in nature, are in dirt, or are likely to be in it, and how long are they likely to maintain vitality and virulence in such dirt (21). Here information is abundant and conclusive to the effect that all disease micro-organisms have been found in dirt, especially street dirt, and that they are likely to be there. When one runs over a list including those of diphtheria, tuberculosis, pneumonia, typhoid, pyogenic-organisms, influenza, epidemic cerebro-spinal meningitis, ova of various parasitic worms,—it is apparent that such dirt is a thing to be avoided. The bacillus of typhoid is known to exist outside the body "in filthy soil for months, in water, many days, or even months, in ice for months. In milk it multiplies rapidly." Uffelman and Osler "have recovered it from garden soil, in twenty-one days, from filter soil in eighty-two days, street dirt, thirty days; linen, sixty to seventy days, wood, thirty-two days."

Recent studies (29), show that tubercle bacilli are abundant in the feces of infected cows. The occurrence of tetanus bacilli in the

fecal discharges of horses is so well known that it need only be mentioned.

It is neither pleasant nor reassuring to meditate upon the pathogenic organisms in the dirt of the streets and barn yards and watch the family cat going through the one and the other, after which she comes into the house to be the center of the family group while she performs her much needed ablutions.

MICE, RATS AND DISEASE.

As an article of food for the cat, both mice and rats need a brief consideration. Both are subject to many of the diseases of mankind, and the chief reason for keeping a cat in many homes is that "she catches the rats."

The association of the rat flea with the prevalence and spread of the plague is too well known to dwell upon. It has, however, been a source of constant surprise to the writer, as discussions of ways and means have been reviewed, by which the plague rat could be exterminated, to see nowhere any recognition of the fact, that the cat, if used as a plague exterminator, must be excluded from the home and the public, and kept as isolated as any other infected material. Cats are both subject to the plague and mechanical carriers of the plague organism (15), (13). If it is deemed advisable to use them as plague exterminators, they ought to be kept from infecting the general public; in fact the cat is not the efficient rat exterminator that she has been given credit for. Recent monographs on the brown rat declare emphatically that the cat as a rat catcher is a failure. The ordinary house cat is too well fed to be at all eager to catch the rat, much less pursue him. If she meets him, it is often she who flees. If the cat had been going to exterminate the rat, the task would have been done centuries ago. The abundance of stray cats, who are painfully emaciated and wofully hungry, and the greater abundance of sleek, well fed rats, bears daily evidence to this fact in any city, as can be seen by any one who wishes.

Rats and mice are known to be subject to tuberculosis, hydrophobia, glanders, anthrax and malignant oedema. In the development of *trichina spiralis* (16), the chain runs through both the rat and mouse, back to the pig. Some forms of ringworm which affect man, are found in both the rat and mouse. This will be discussed below. Tuberculosis in rats and mice is given by Grout (9), as one source of infection of milk.

It is imperative that rats and mice be exterminated. The agent, however, should not be the family cat which is an intimate play-

mate of the children. In this era of preventive medicine, a rat trap is hardly a desirable plaything for the children, yet conditions are often literally that.

In the detailed study of diseases to which the cat and man are susceptible, diphtheria will be considered first; here we have a specific disease, the organism of which is not only well known, but easily demonstrable. Diphtheria is further one of our most dreaded diseases even though we have an antitoxin with which to combat its ravages.

Abbott (1), reports experiments upon kittens in which inoculations were followed by the formation of a false membrane at the place of infection. The membrane resembled that in man, and diphtheria bacilli were recovered from the membrane, and from the fluid in the adjacent tissues.

Dr. Fisher (6), reports an epidemic of diphtheria in a hospital in Connecticut, in which the source and continuance of infection was traced to rats which became infected from the sewage, and the rats in turn, infected the cats which caught them. Some of the rats showed unmistakable Klebs-Loeffler bacilli, as did cultures from the fur and the throats of the cats. Dr. Fisher's terse summary of the situation states, "the isolation hospital infected the sewer, the sewer infected the rats, the rats infected the cats, and the cats infected the people,"—a summary which reminds one irresistibly of the classic tale of "the house that Jack built."

Rotch, in his *Pædiatrics*, states that cows, cats, dogs, and pigeons may have diphtheria and be a source of infection to those brought into constant contact with them.

Parke's (23) *Hygiene* states that an affection of the throat, similar to diphtheria may be found in cats, pigeons, fowls, etc., during epidemics of diphtheria. Klein believes diphtheria to be a natural disease of the cat, and has also shown that cows, and calves inoculated with cultures of diphtheria bacilli develop a disease similar to diphtheria in cats, and which is usually fatal in two or three weeks. In the cow, the bacillus was recovered from the milk as well. In this connection it may be noted that an observer found virulent diphtheria bacilli in the urine five hours after the inoculation of an animal. The contrary fact has been stated in connection with human infection. Roux and Yersin produced wasting paralysis and ultimately death in animals by the inoculation of the urine from virulent cases of diphtheria.

Further cases illustrating the agency of the cat are as follows:

Dr. H. B. Schofield, Parkston, S. D., reports: "Oct. 17, 1897, I was called to see a sick child, who, I found, had diphtheria, and who finally recovered. A younger child was treated with serum on the second day and recovered. One, the eldest, had died before I saw the family. History—Children had a pet cat which was taken sick and died a few days previous to their illness. They held a funeral and buried it. Only a few days elapsed before the eldest was taken sick and died of diphtheria. The next younger and lastly the youngest were taken sick as stated above."

Dr. J. R. Ryan, of Philadelphia, Sept. 22, 1905, says: "In the matter of cats as a source of disease, while I never had a positive case of cats as a cause, I had two cases, one of mumps and one of diphtheria, where cats were associated and showed post-mortem lesions and germs, supposedly causative of the disease. The diphtheria case consisted of four children, who had the disease. They all recovered, but bacteriological tests of throats showed positive, time after time, for several weeks. It was then noticed that several cats in the house were sick; two had died—apparently choking. A bacteriological examination of the throat of one of them, showed positive diphtheria bacilli. At the request of the board of health of this city I took the cat to them. Post-mortem revealed membrane in throat and trachea. The other cats were immediately destroyed and in two or three days cultures from the children's throats were all negative. In this case the children were quarantined while cats were free to roam."

Dr. Jewett relates the following case in the Medical Record.

"A farmer's two children, suffering from diphtheria, had a pet cat which was with them much of the time for the first week of their illness. On the fifth or sixth day of the disease I was asked to see the little six-year-old daughter of their next neighbor, who lived about one-fourth mile from them. I found her with a well marked case of diphtheria. They stated positively that there had been no communication between the two houses. The little girl had had an attack of diphtheria when she was about two years old, and, as she was an only child, they had avoided every case of sore throat since. On my next visit I found the girl fondling the boy's cat, and learned that when well the children were constant playmates, and that the cat was as much at home in the one house as in the other. The next day the cat seemed sick and died that same night. I made a post-mortem examination, and judging from the condition of the mouth and throat (which were lined with false membranes), decided the cat died of diphtheria and had been the means of spreading the

disease from the boys to the girls. Three other cats on the farm died, all with same throat symptoms of diphtheria. One of the boys died, the other recovered as did also the girl."

The following is reported by J. M. Randall, M. D., of Graceville, Minn.: "During the years 1897-1898, diphtheria occurred abundantly if not epidemically, in a German community occupying two adjoining towns in Traverse county, Minn. Periods of quiescence of a few weeks would be followed by a fresh outbreak, frequently in families apparently secure from the infection. These people had for the most part large families, and my attention was attracted to the fact that the first child to be taken sick was almost invariably the next to the youngest, the two-year-old, the least apt to meet with diseased persons. Even during the school quarantine measures were fairly effective for the pupils, but failed to protect the infants at home. It is a matter of common observation that cats in the country visit each other at distances of a mile or more and this, in connection with the habits of the animal to put its nose into everything on the floor and then to rub it into the child's face, led to a simple conclusion. A crusade was started on cats in that region, three-fourths of them were killed and the rest rigidly excluded from the house, whereupon the disease promptly subsided, and I think it has hardly been found in that neighborhood since. Having practiced in this community from the time of its early settlement, I have met many sporadic cases of clinically typical diphtheria where the possibility of direct infection for several weeks previous could be ruled out absolutely, but never, as far as I can recall, except where the disease had previously existed in the neighborhood and cats were permitted in the house. It should be mentioned that during the Traverse county epidemic a number of cats sickened, and some died with characteristic symptoms."

Dr. Law sends the following: "In a personal letter I may add a case that came under my notice in Ithaca of a kitten which died of a malignant sore throat, and which was followed promptly by a fatal (diphtheria?) in the owner, a young girl that had taken care of the kitten up to its death. In neither human nor feline victim was the true nature of the disease demonstrated by bacteriological investigation."

In a note under the London letter in the *Journal of the American Medical Association* of September 19, 1908, p. 1023, Dr. Fraser, health officer of Portsmouth, reported 423 cases of diphtheria the preceding year; of these, many were traced to cats. He found fre-

quently that the "cat had a bad cold," before the children were taken ill with diphtheria. Cultures taken from the cats were positive for Kleb-Loeffler bacilli.

Tuberculosis. Tuberculosis in its various forms is not only one of the widest diffused of human diseases, but is also found in practically all the warm-blooded animals, and occasionally in the cold-blooded ones. Among domestic animals—cows are more affected—it is rare in sheep, but frequent in pigs. Osler states that dogs and cats are not prone to it but that cases are on record in which pet animals have become infected from their tubercular owners. Gibson states tuberculosis exists to a wide extent among domestic animals and often proves as fatal as in man. Inhalation of dried tubercular sputum is followed by infection in the most refractory animals. Animals fed on tubercular matter nearly always become infected. The cat is more frequently affected with spontaneous tuberculosis than is the dog and is more readily rendered tubercular experimentally. Kittens are specially susceptible as are the young of all species including man. Law's Veterinary Medicine (16), comments to the effect that dogs and cats rarely show the disease in their natural condition but contract it readily in inoculation. In both animals the history usually shows the connection of house life and the habit of eating after tubercular people.

The public is alive to the fact that pulmonary tuberculosis is a preventable disease and also one which from its extent it is most desirable to check. Every source of infection is watched as closely by the laity as by the physician, and the disinfection of the sputa containing the organism is faithfully done in an efficient manner. The recognition of the fact that the cat may be as susceptible to infection of pulmonary tuberculosis as man himself, ought to be sufficient to keep the cat away from sources of infection and away from children and susceptible adults if the cat develop a persistent cough. In the latter case the cat ought to be restrained from spreading disease through the community. Grout has called attention, also, to the danger of such cats, living on farms, infecting milk in the dairy as they help themselves from the milk containers. The alarming mortality in infancy everywhere demands the exclusion of all possible sources of infection of milk supply.

Scarlet Fever. Scarlet fever is as much dreaded, if not more, than diphtheria. Its specific organism is still unknown and hence the difficulty of tracing infection by animals. None of the infectious diseases are more tenacious or virulent than scarlet fever. Numerous

instances illustrate its terrible virulence after months or years, when contact between infected material and a susceptible individual takes place.

Gibson (10) states that scarlet fever is carried by means of domestic animals—such as dogs or cats. Evidence points to the cat only as a mechanical agent here, just as anything else coming in contact with the infected material can mechanically convey infection. In this connection, a case of infection by means of a rabbit is noted in this city. The rabbit was owned by a child who had an attack of scarlet fever. One day the rabbit escaped into a neighboring yard, and another child played with him. In a short time the second child came down with scarlet fever, and this was the only source which could be found of infection for the second child.

The following case reported in the *Lancet* for July 28, 1906, illustrates the point. The case occurred in a family in which all hygienic precautions were duly observed. The family returned to town from the country seat because scarlet fever had broken out in the neighborhood. Some days later one of the daughters, sixteen years old, came down with the disease and was duly isolated while the disease ran its course. On the twentieth day of the illness a younger sister returned home and though kept from her sister, after twelve days came down with the same disease. The infection in the second case was traced to a cat in contact with both patients.

WHOOPIING COUGH.

Macewen (18), reports the direct successful inoculation of a cat with whooping cough. Osler's system of medicine says it is observed in cats. In a personal letter a case of whooping cough in a cat is reported by Dr. Ryan, of Philadelphia. The cat developed a cough with vomiting. After the cat was killed an examination showed characteristic features of the disease.

PLAGUE.

The plague has been discussed under the relation of the rat to disease. It is well to note here that plague has also infected the ground squirrels of California to a marked extent, thus giving an additional source of infection to the cat. The following example of the association of the plague and the cat is quoted from an open letter of Dr. Meany to the *Medical Record* (N. Y.), Jan. 18, 1908:

Dr. Mason, the Port Medical Officer at Hull, Eng., in his official report as to the origin and outbreak of bubonic plague on board the steamship *Friday* at Hull and there held at quarantine and

thoroughly fumigated, where she arrived with a cargo of cotton, Jan. 10, 1901, says: 'I am of the opinion that the probable cause of the malignant outbreak was a cat, which went aboard at Alexandria (Egypt), and which showed signs of illness during the voyage. It had frequented the forecastle occupied by the sailors. Of the nine sailors taken with the plague, eight succumbed to the attack. The mortality was confined to the men who lived in the forecastle of the ship, and to these only. The ship had twenty-one hands all told, with clean bills of health from Alexandria and Algiers, where she had touched. Ships had been arriving regularly in Hull from Alexandria with clean bills of health and the plague was not believed to exist there, or at the port of Algiers, which had also been declared free from the plague. There was no outbreak of the plague in Hull proper. The bodies of three rats, afterwards discovered in the ship, were sent to Yorkshire for bacteriological examination with negative results.'

We are prone to think of the plague as something far away, though we recognize the widespread infection of rats and squirrels in California. It gives a distinct shock to read that the State Board of Health in Iowa issued a bulletin in December, 1911, urging the citizens to assist in exterminating squirrels, rats and mice as they are well known carriers of plague, and also of leprosy.

Arterior poliomyelitis is one of the diseases in which investigations have been active in the preceding few years. The organism has yet to be found, but similar affections are prevalent among many species of animals. In Massachusetts, several cases were found in which the patient "had been in intimate contact with a paralyzed cat."

Smallpox (16). As every one knows, smallpox has a most characteristic eruption, which passes through successive stages. Not only man, but the greater part of the lower animals are subject to it, even insects being said to be susceptible. An instance in which the cat is the mechanical agent in its transmission is as follows: "A case of smallpox developed in a family and it was absolutely certain that there had been no exposure or contact with the outside world, and the contagion was traced to a pet cat. Not a member of the family had been away from home or the farm, and no one had called, white or colored, for two or three weeks, due to the fact that smallpox was in the neighborhood and the family were alarmed, and kept aloof from the outside world holding no communication with it whatsoever. They had a pet cat, which was known to visit a neighbor fre-

quently several miles away, where there was a case of smallpox. This cat was a great pet of the little girl of the family, and the only one who really handled or fondled the animal. In two weeks after the visit of the cat to the infected district the little girl had developed smallpox (21).

Glanders is an infectious disease mainly confined to the horse, but infectious to man. Its mortality is very high. Huidekoper (12), states that it is usually found in cats around knacker's yards, in zoölogical gardens, and veterinary dissecting rooms. While cats are always susceptible to it, it is contracted by other domestic animals as well. Huidekoper cites a case which came under his observation. After finishing an autopsy on a horse which had glanders, he noticed a cat and kittens eating some of the organs placed one side for demonstration. He ordered the cats all quarantined and in four days all developed glanders and had to be killed.

Anthrax (16), is one of the most fatal and widely spread of diseases with which cattle are affected. When man is infected it is always through infected animals, either directly or indirectly. Osler states that anthrax, both geographically and zoologically, is the widest spread of all infections.

Billings "Public Health," states the cat to be more susceptible to anthrax than the dog. Law observed in Genossee a cat licking a stone boat in which anthrax hides had been carried. The cat died afterward of anthrax. Anthrax forms spores, and this fact, with the fact that it clings tenaciously to hair, makes it a more dangerous infection.

Malignant edema (16), is a much rarer infection, perhaps owing to the fact that exposure to air inhibits its growth. It may attack both man and the lower animals, including the cat. Many cases are fatal within twenty-four to forty-eight hours.

A disease of cattle and other domestic animals is due to the fungus growth actinomycetes, or "ray fungus," and should be noted in passing, as cats in common with other animals, have been experimentally inoculated with it. Its common name, "lumpy jaw," refers both to its common seat and clinical appearance. It is variously known as "cancer of the tongue," "osteosarcoma," etc. It occasionally affects man, causing serious and even fatal lesions of the lung and the brain. It may also affect the skin (16).

Dermatomycoses. Various skin diseases due to parasitic fungi are common to the lower animals as well as man (20), (19). These

fungi lodge in the skin, causing more or less irritation, and are contracted by the young animals or the child much oftener than by the adult.

Ringworm, due to various species of the genus trichophyton, is common to the cat, and has frequently been transmitted to man. *Tinea tonsurans* invades the hair and in man, the beard. This form is very prevalent among school children (3% in the common city school—Law), and in asylums. It is easily transmitted from person to person by clothing, towels, etc. It is also very common among young domestic animals. Auvergne recognized its transmissibility from animal to man in 1835. Fenger identified it in the cat in 1865.

Dr. Mewborn has reported a small epidemic of ringworm due to cats (19).

In the New York Medical Journal for Nov. 15, 1902, Dr. Mewborn reports a case of ringworm of the face and two of the scalp contracted from a microsporon of the cat. This article is illustrated and has the microscopical findings definitely given.

Favus, in the cat, is always traced to a mouse or a rat. The cat when infected with favus, can and has conveyed the disease to man. Draper reports two children so infected; others have reported the same occurrence (20).

Dr. Harold Williams, Dean of Tuft's Medical College, writes that he has had a large number of cases, probably 50 or more, of *tenia circinata*, in which there seemed no doubt that the source of infection was a cat.

In the British Medical Journal, Vol. 1, 1901, p. 324, an instance is given in which a patch of ringworm on the left cheek of an infant of four weeks, was traced to a similar patch of long standing, on the neck of a cat in the house. Dr. Leslie Roberts has noted the following in the British Medical Journal, Vol. 1, 1903, p. 424: "The cat in question was infected in Egypt. She was brought to England, and twenty days after she was taken to a house in Cheshire where there were a large family of children. A few days later ringworm was noted on the neck of the oldest daughter. Within a month fourteen individuals had been infected, and also a skye terrier and a kitten. Later the infection was conveyed to a school."

All varieties of ringworm are very resistant to treatment. Experiments have shown that dry spores infect buildings for two years, and resist exposure to light for months. The contact of any hairy or abraded surface of the human skin with these spores is sufficient to inoculate the person with them.

In some of the varieties, Law has noted that, "the chain usually extends from affected rats and mice to the paws and face of the cat, and thence to the children who played with it."

In view of the tedious recovery from these skin infections, as well as the great annoyance caused, to say nothing of the enforced absence from school, Dr. Mewborn pertinently writes, "the danger of contracting these diseases from caressing animals should be called to parents."

EXTERNAL ANIMAL PARASITES.

The flea of the dog is also that most common to the cat. It may live on man. The human flea can be conveyed to both cat and dog.

While these insects are to be avoided in themselves, they are still more to be avoided as hosts of bacterial diseases fatal to man. The flea on the plague infected rat has been shown conclusively the host of the plague organism, and by means of the cat, to have infected man (13).

The sand flea, a tropical insect, though living in plants and sand, yet may attack man, as well as cats, dogs and all other domestic animals.

The fecundated female penetrates the skin and lays her eggs, often one hundred of more, under it. This results in inflammation, ulceration, and death of the parts. It may involve the deeper tissues, and sometimes causes loss of toes in man, and even feet and limbs in animals.

Scabies (8), in one form causes mange in the cat when left to shift for herself. This is contracted by all the domestic animals, and man is not exempt (20).

The disease is seen oftenest in the fall, when people returning home after vacation, find that their cats—which had been left to shift for themselves through the summer—have become infected with this loathsome parasite. Cats are very susceptible to it, and it spreads often in an epidemic form, if active measures of prevention are not taken. It was first described by Wedelius in 1672. At this time it raged epidemically in Westphalia and elsewhere, and nearly all cats were killed by it. The parasite was first seen by Gohier in 1813, and Hering described it in 1838. The effects on the cat are usually very severe, and while it may last three to six months, it often kills a young cat in a few weeks unless active treatment is given. It is usually limited to the head and neck and often involves the eyes, ears, nose and mouth. Any cat, unless closely guarded, is sure to be exposed to the disease and all cats may easily acquire it.

As regards infection of the human subject with mange, Hertwig (20), relates a case in which a servant girl contracted the disease from a cat which she allowed to sleep on her bed. Marrel has seen two adult persons and a child infected. Hering observed the infection of two young people. Gerlach has experimentally inoculated students; other cases are reported.

As scabies of the cat may be transmitted to the horse, an economic issue rises at once. It has also been transmitted to the cow and the dog.

INTERNAL ANIMAL PARASITES.

The amoeba coli is often found in the intestines of both man and the lower animals. While some varieties are harmless, others are causes of severe forms of dysentery and also of hepatic abscess. Shaudinn (22), was able to infect cats with the pathogenic amoeba present in dysentery. Other observers have found amoeba present in pathogenic forms in cats. The amoeba coli felis causes disease in the cat.

A ciliated infusoria, the lamblia intestinalis is found in the cat as a harmless parasite. It is also common to the dog and sheep. Osler (21), has noted it in the intestine of man, and notes further that flagellates have been found in cases of pleurisy and pulmonary gangrene in man.

Trypanosoma gambiense (15), the parasite causing the terrible sleeping sickness among natives of South Africa, and to which Europeans are susceptible, is stated to be easily conveyed to both cats and dogs.

Trematode or fluke infections (22), distomatosis trematodes are widely distributed, and many species are known to be causes of serious disease in man. The life cycle of trematodes is complicated, involving in some forms, one or more generations outside of the human host.

In man, there are four typical clinical classes of distomatosis, namely, pulmonary, hepatic, intestinal and venal.

Pulmonary distomatosis, due to paragonimus westermanii, is a disease widely distributed. Its home apparently is in Asia, and it is found in great abundance in China and Japan. It is found in many species of animals beside man. In the United States, a "genetically related, if not specifically identical infection" occurs in endemic form in hogs. Cats are well known and often recognized hosts. In certain parts of Formosa, 15% of the inhabitants are infected. In one Japanese village nearly all the inhabitants are hosts of the parasite.

It has long been recognized in Japan for its ravages in the lungs of man. Sometimes whole villages are infected to such an extent that they have been quarantined by other villages; even physicians fearing to go to them lest they be infected.

These epidemics are characterized by cough and hemorrhage from the lungs. Many cases at first have been ascribed to tuberculosis. Similar epidemics have occurred in China and other countries, often fifteen to twenty per cent of the people being infected.

Ward, in 1894, found the organism in the lungs of a domestic cat in Ann Arbor, Mich. Cats are known to suffer with it in Japan. Law observes that it is sure to be brought here by the Chinese and Japanese as well as our own Philippine soldiers. He emphasizes the need of efficient measures of restriction and extermination from the small areas in this country wherever found, since its spread can only be a public calamity. Law further observes, "all cats or dogs having a rusty or bloody sputum should have been examined for the eggs of this parasite, and if found the host and all animals of the same species living near it, together with all susceptible animals in the same place or in the water shed from it, should be secluded and destroyed at public expense and the bodies properly disposed of." (Law, Vol. V, p. 372.)

The Asiatic liver fluke disease, caused by *opisthorchis sinensis* (*distoma sinense*), is endemic in Asia, and is especially prevalent in China and Japan. Some provinces have suffered with severe epidemics from its ravages. Its normal hosts are, man, the cat and the dog. One cat was found to harbor 600 specimens.

In Japan, widespread ravages are due to this parasite. Some native practitioners estimate that one in five or seven persons harbor the parasite. Katsurada (1900), recognized 654 cases of infection among 1,075 persons examined. (In the preventive treatment of the above disease, emphasis is placed on destruction of all infected dogs and cats.)

A Siberian liver fluke disease is widely distributed in Europe. The cat is one of the natural hosts and man is susceptible to the infection. *Opisthorchis felineus*, the parasite in question, is hatched in snails, and circumstantial evidence points to raw fish as the source of infection.

An Asiatic blood fluke is reported for cats as well as man. (22). Its history has not been definitely traced. An African blood fluke is much more common, an infection with it is common among school children of Egypt.

Taeniasis-Cestode Infection.—Occasionally man harbors tapeworms common to the cat or dog. Of tapeworms common to man, the cat is a host of *dibothriocephalus latus*, the fish tapeworm. This parasite is common to fish in European waters, and is fast becoming cosmopolitan, as it is carried in commerce and also is brought into this country by infected immigrants. The waters of northern Lake Michigan are already reported infected with this parasite. (Jr. A. M. A., Nov. 11, 1911.)

Rarely, the *tenia echinococcus* develops in casts. *Tenia cucumerina* is common to dogs and cats, and cases are reported of infection in children.

The great prevalence of various trematode infections, and the fact that both Chinese and Japanese may bring the infection into this country, and general infection result before the condition is recognized, is a feature of the yellow peril that needs instant recognition that preventive measures be put into action before infection takes place.

Round worm infection. Nematodes. The cat, in common with other animals, is infected with a "generically identical, but specifically distinct" form of hookworm from that of mankind. The widespread interest and the important findings of the many investigators who are studying the extent and distribution of the hookworm disease, all point to the need of perfect cleanliness and avoidance of dirt which has been shown to be such a prolific source of infection.

The cat is also often infected with various other species of round worms, some of which are pathogenic to man. The ova of all species of worms are often in dirt, and the cat is peculiarly adapted by nature to be a dirt carrier.

Trichina spiralis is a worm common to man, the dog, and the cat, and most of the domestic animals, as well as many wild species. It has been found in every country where it has been sought. The chain through the pig and rat, back to the pig has been noted. In man if the worms have been ingested in sufficient numbers, severe and even fatal illness follows.

Cats in common with other animals have many other parasites, some of which are pathogenic to them, and some of which are also pathogenic to other animals though not to man. Much research is needed here. These scattered facts throw many flash lights on wide fields of biology and pathology, inviting study at every turn.

SUMMARY.

The above paper has reviewed the part the cat plays, or is in a position to play, in the transmission of disease. When the wide spread distribution of both plant and animal parasites in all species of animals is considered, and the still more significant fact, that animal experimentation already has revealed the identity of many pathogenic micro-organisms in different animal species, the problem of the cat as a carrier of disease becomes alive with undesirable possibilities.

The economic aspect of the question to the farmer is in need of immediate investigation. The cat is peculiarly adapted to distribute specific disease organisms as she ranges over the farm.

In the city, as the cat makes her home in places where food is for sale, there is unlimited opportunity for infection of food, while meat, butter and milk furnish culture media for many bacterial organisms injurious to man.

In the past, the cat has suffered in common with other species, the ravages of world wide epidemics. In some instances (?) she has been held responsible for such epidemics and banished from the community.

The scavenging habits of the cat, in connection with her great freedom in the house, give her unlimited opportunity for acquiring and spreading infection from person to person (11).

In the many bacteriological studies of the human mouth, over 100 organisms have been found which can live in the mouth without causing disease. It would be most desirable to make similar studies of the bacterial flora of the mouth and throat of the cat, for she has such unlimited opportunity to take in all species of infectious organisms.

Modern medicine emphasizes the urgent need for protecting the child until resistance and ability to avoid infection is developed. Therefore, for the safety of the child, and the general public as well, the following conclusions must be drawn:

1. A cat should be kept under as complete control as any other domestic animal. This will result in:

- (a) Keeping it away from common sources of infection, especially from all people ill with transmissible diseases.

- (b) Prevention of becoming stray, and with the stray cats eliminated, household pets can be properly controlled.

2. A cat which has become infected, or one which is suspected

of being infected with any transmissible disease, should be quarantined so as to insure against its spread.

3. All tramp cats ought to be kept from contact with children until it is certain that they harbor no infection.

4. Boards of health of towns and cities can no longer ignore the cat as an active agent in carrying many kinds of disease infection. They should therefore take such measures as will eliminate all cats from public streets, alleys and all places under public jurisdiction.

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OCCUPATIONAL DISEASE.

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In the development of our civilization from the individualism of the savage to the extraordinary complexity of our modern industrial society, we have created many new and perplexing problems as the result of which we find that the individual is no longer able to successfully adjust himself to his environment, or to always live in a suitable one, and that the health of the factory laborer has ceased to be a question for the individual alone, and has become a great social question, demanding social regulation through appropriate and adequate legislation, a problem which only within recent years has been approached in a scientific way. This, not because there is lessened effort nor lessened need of individual protection, but a new way of meeting the need by way of co-operation, a contest in which the unit of struggle is not the individual, but the group, for whose advantage the result is secured, and in which the means, the interest, and the end of the struggle are in some degree collective, and in which there is maintained that sane balance between over-socialization which produces a softened individual, on the one hand, and over-individualism, on the other hand, which produces a man whose tendencies are destructive to social interests and injurious to the general welfare, which, operating in the active situations of life, establishes the highest society and contributes to the progress of mankind.

"While perhaps the average American sees things in the large; that we are in many ways in the van of civilization; sees the results of the combined efforts of great masses of laborers; realizes the rapidity and the magnitude of our national growth, and has an abiding faith in his country and in himself, he has failed utterly to understand the marvelous social forces that have been evolved, that has made these things possible, and have coincidentally, and consequently, produced profound changes in social relations, social needs, and the relation of the individual to society."

Perhaps least of all this average citizen recognized his dependence upon the medical profession, and that the health and longevity and efficiency of the industrial workers has become a matter of increasing and serious concern not only to the earner and his employer but also to the State. On the other hand, it may be only fair to say that while the physician is the most social in his service

of all professional men, and while his duties bring him into the most intimate and important human relations, and while his highly specialized knowledge and training makes him the natural guardian of the public health, still, because of the fact that he has not made a study of modern industries or of his relations to society—due partly to a serious fault in the average medical college curriculum which gives him no hint that he is to live and practice in an industrial society—the average physician fails to recognize the occupational sources of many diseases.

Fortunately, there have always been the few who have done and are willing to do the thinking for the many. In this there have been some workers, some physicians and some countries that have devoted to this subject deeper study and more careful investigation than have others. For example, Germany and Great Britain, perhaps, in this direction more than any other countries, and the work of the Germans has been the most complete and systematic. As we have no reliable morbidity statistics in our country, we are compelled to go abroad in order to acquire a scientific foundation on which to base plans for improvement, and especially to England and Germany, for carefully prepared and accurate data on which to base our estimates of the extent of sickness and death due to occupational disease. Practically all the standard works of reference on occupational disease are by either English or continental authorities. I know of no modern treatise on occupational disease by an American authority on industrial hygiene. Even the census reports on occupational mortality are of limited value and practically useless. Of course, I except the exceedingly valuable monographs and contributions by such men as George Kober, of Washington, D. C.; Mr. John B. Andrews, secretary of the American Association for Labor Legislation; Mr. Frederick L. Hoffman, of the Prudential Life; Dr. Alice Hamilton, of Chicago; Mr. Edward T. Davies, chief of Factory Inspection of Illinois; the Massachusetts State Board of Health, etc. These constitute largely an account of our present knowledge of probable conditions rather than a record of new and known facts concerning the actual conditions in industries detrimental to health.* But let us inquire what is understood by the term "occupational or industrial disease," consider the importance of the subject, give some statistics and examples, and then devote a little time to what has been and is being done to improve condi-

*Dr. Alice Hamilton's work for the Illinois Occupational Disease Commission is an exception to this general statement.

tions both abroad and at home, and, lastly, let us consider some of the problems involved and the outlook concerning them.

The industrial revolution marked an epoch in the history of the world. One of the new problems introduced by the revolution is that of occupational diseases.

An occupational or industrial disease has been defined as:

(1) "A malady which arises as the result of the prolonged action of harmful influences in certain occupations and which consequently and exclusively occurs in persons working in these trades, or at least more frequently than in other persons in general." (Dr. Van der Vorghht.)

(2) "Every disease recognized as particularly frequent in a profession ought to be considered as an industrial disease to the extent that it is clearly due to the risks in the trade." (Dr. Gilbert, Belgium.)

(3) "Again defined as 'Morbidity results of occupational activity traceable to specific causes or labor conditions, and followed by more or less extended incapacity for work.'"

(4) Briefly, the direct effects of a particular trade in which a person is engaged. The effects may be direct or indirect; immediate or remote.

Diseases due to peculiar conditions of employment may be grouped roughly into five general or principal classes:*

1. Diseases due to gases, vapors and high temperatures.
2. Diseases due to increased or decreased atmospheric pressure.
3. Diseases due to metallic poisons, dusts or fumes.
4. Diseases due to organic or inorganic dust and heated atmosphere.
5. Diseases due to fatigue.

Or, more briefly, we have a first group of diseases caused by breathing impure air; a second group due mainly to extremes or rapid variations in temperature; a third group due to excessive humidity; and a fourth due to fatigue.

From the foregoing it may be seen that there are four distinct problems to consider in our efforts to ameliorate and standardize conditions of labor in any given occupation. These relate briefly to temperature, humidity, purity of the air, and the strain due to speeding, and to length of the periods of labor. Time will not permit even a passing reference to all of these, but allow me to refer

*1. Diseases of Occupation: Oliver, London, 1908.

briefly to two or three to illustrate the importance of the subject. Before doing so, however, let us establish a standard of morbidity and mortality.

STANDARD OF MORBIDITY AND MORTALITY.

At the outset of any inquiry into the detrimental effects of certain trades, it becomes necessary to agree upon a normal standard of morbidity and mortality by which the detrimental effects of these trades shall be estimated or measured with approximate accuracy. Mr. Frederick L. Hoffman, speaking of this, says: "European investigations into industrial sickness and accident experience would seem to warrant the theoretical assumption that among an industrial population of ages fifteen years and over, of both sexes, but in the proportion of two males to one female, and engaged in miscellaneous trades and not exclusively in the hazardous trades, there will occur fifty cases of sickness per hundred persons employed per annum, and of this number five cases will be the result of industrial accidents. The mortality rate will be approximately ten per thousand per annum." This standard will vary according to age distribution of the workers, and the results will probably be less for the United States. The number of days of sickness increases with the age, and in calculating the rate of sickness among members of special trades it is absolutely necessary to take the age factor into account. Taking the above as a guide, it is now possible to conclusively establish the special disease incident to particular injurious trades.

INDUSTRIAL POISONS.

Even an enumeration of the industrial poisons would be tiresome to you, and consume too much time. Briefly, they may be defined as "those substances which, in their production, their use, or to a less extent occurring as by, or intermediate products, endanger by chemical processes the working capacity of the laborer."

These industrial poisons enter the body (1) through the mouth and digestive system, (2) through the respiratory system and (3) through the skin, and "their deleterious chemical effects arise from the fact that certain gaseous fluids or solids which enter the body, regardless of the manner of that entry, produce chemical reactions with the compounds or elements of the body, thus lessening or destroying the efficiency of the component parts."

Let me call your attention very briefly to one of these, namely, lead. The deleterious effects of lead have been known for hundreds of years, and it is considered by far the most important of the industrial poisons because of the insidiousness of its action, the severity

of the lesions caused by it, and the fact that it is more widely used than any other of the industrial poisons. It was partly for these reasons that the Illinois Occupational Disease Commission chose this poison as the basis of an extensive study, this part of the work being done by Dr. Alice Hamilton. She shows that the compounds of lead are dangerous in the following order: Sugar of lead, lead oxide and sub-oxide, red lead and litharge; chrome yellow and green, metallic lead. She found that lead was used and caused poisoning in the following industries: Smelting and refining, handling metallic lead, printing, typesetting, plumbing, white lead factories, dry colors, paint houses, painting trade, mechanical artists, retouchers, lead oxide works, litho transfers, storage batteries, putty powder, glaziers, rubber industry.

And in the following unusual ones: Making wall paper, handling wall paper, finishing coffin handles, polishing cut glass, repairing storage batteries, wrapping cigars in tin foil, working in brass foundries, enameling bath tubs, laying electric cables underground.

We thus see that there are twenty-eight industries in Illinois in which lead poisoning is a factor, and the lead trades are much more dangerous here than in England and Germany, owing to the fact that in those countries there are laws in regard to this industry, while in this country we have, until very recently, had none.

In this study already referred to, Dr. Hamilton found records of 578 cases of lead poisoning in Illinois, in the records of physicians, for three years, and there has been an average of about one case a day reported to the State factory inspector since our Illinois law, of which I shall soon speak, went into effect July 1, 1911.

MATCH INDUSTRY.

Formerly in all countries; and at the present time in the United States, the head of the ordinary parlor match was made by dipping the end of the bit of wood in a paste containing white phosphorus. For more than seventy years it has been known that people who work in these match factories, where this white phosphorus is used, sometimes contract a loathsome and terrible disease known as "phossy jaw," or phosphorus necrosis, due to disease of the bones of the jaw, and caused by the phosphorus, which is a deadly poison, a very small amount of it being capable of causing death. When once the jaw bone becomes necrosed, a deforming surgical operation is necessary, and sometimes the whole of both jaws may require removal. The processes which are especially dangerous are those which bring the employe within range of the poisonous phosphorus, such as

mixing, drying and boxing, where the rooms are imperfectly ventilated.

There are about fifteen match factories in the United States, and they employ between three and four thousand persons, and many of them, probably almost half, are women, with hundreds of boys and girls under sixteen years of age. In Illinois we have only one match factory, and it employs about one hundred and sixty persons, and eighty-six of these are girls under nineteen years of age. The chief of State factory inspection has the names and addresses of twelve persons who have "phossy jaw" as the result of working in this match factory, and I am informed that one of them has brought suit for damages against the company.

When England passed the famous Workmen's Compensation Act in 1906, only six (now twenty-seven) diseases were included, and one of the first to come under its provisions was this malady due to phosphorus poisoning in the match industry, as the effect of white phosphorus upon the health and lives of the workers had been recognized as a serious problem for more than seventy years. Regulation was attempted, the result being the concentration of the manufacture in the hands of the few.

In France, where the manufacture of matches is a government monopoly, and where there is a system of State compensation for injuries received in the course of employment, the great expense due to cases of phosphorus poisoning became readily apparent. Under the stimulus of this expense, a commercially practicable, harmless substitute was discovered in what is known as sesqui-sulphide of phosphorus. Instead of its being immediately adopted everywhere, the manufacturers refused to use it, because it cost nearly 5 per cent more to manufacture, and each country refused to adopt it until other countries did likewise, as they seemed to prefer to kill and maim their employes rather than drive away the industry. Fortunately, in 1900 the International Association for Labor Legislation was organized to deal with questions of this kind. In 1904, in co-operation with the Swiss government, it called an international conference with the hope and expectation of abolishing poisonous phosphorus by international agreement. As early as 1906, France, Italy, Denmark, Luxemburg, Switzerland, the Netherlands, the German Empire, and in 1908, Great Britain, and, in 1909, Austria, signed a treaty agreeing to prohibit the manufacture, sale, importation or exportation of poisonous phosphorus matches.

In this country, while the manufacturers admit that the harmless

substitute would cost less than 5 per cent more, they say that its use would place them at too great financial disadvantage. Then, too, the patents on this new harmless process were owned by one company in the United States, who thus secured a monopoly. Recently, however, they have given it freely to the world. Then, too, the leading manufacturers, representing 95 per cent of the total product, have agreed to discontinue the use of the poison as soon as a uniform prohibitive regulation can be secured, they wisely demanding that such regulation shall come from the federal government, and not from the individual states, in order to secure uniformity in its operation.

The American Association for Labor Legislation, a branch of the International Association, accordingly introduced a bill in Congress (known as the Esch bill), on June 2, 1910. This bill is, unfortunately, in the hands of a secret committee whose meetings, if any are held, are secret. I personally believe that if this bill were reported out, either favorably or unfavorably by the committee, it would pass by an overwhelming vote.

It is to be hoped that this bill will pass at the present session of Congress, and thus an important, serious, horrible occupational disease will be absolutely eliminated by a simple act of the federal government. We can well afford to do this, as our export trade is insignificant, and the United States should join the more progressive countries in abolishing this terrible disease.

DUSTY TRADES.

The importance of dust as a factor in occupational mortality has attracted the attention of every authority who has written upon the subject, and it requires no extended consideration to prove that human health is much influenced by the character of the air breathed, and that its purity is a matter of great sanitary and economic importance. Aside from the infectious material, the pollution of the atmosphere by organic and inorganic dust is unquestionably the cause of a vast amount of ill health and premature or increased mortality among the men and women engaged in those industrial trades and occupations that minister to human needs. The destructive effects of a dust laden atmosphere are very great; because of its inherent mechanical properties it is destructive to the delicate membrane of the respiratory passages and the lungs, and it is an accepted axiom of modern sanitary science that measures and methods for the prevention of dust are a preliminary and essential consideration in rational methods of sanitary reform.

Sir James Crichton Browne, in his address on the dust problem

at the Sanitary Congress in Manchester, England, in 1902, said: "The mortality of the principal dust producing occupations, compared with that of agriculturists, who live and work in what is practically a dustless atmosphere, is excessive to a startling degree. It is not suggested that this excess is to be ascribed to the dust alone; no doubt various factors contribute to it, but the facts that it is due mainly to respiratory diseases, that it is distributed amongst the several occupations pretty much in proportion to their dustiness, and that it has diminished in some instances where the dust has been effectually dealt with, justify the conclusion that it is largely dust begotten."

He also points out that a detailed examination of the conditions of work in each of the twenty-two principal dusty trades, brought out clearly the fact that the unhealthiness was born of, or was primarily due to the dust inhaled by the workmen, and that there was always a well-defined relation between the death rate and the quantity and quality of dust present in the atmosphere. There is apparently no very material difference in the manner in which the different varieties of dust act upon the human organism, except where, in addition to mechanically injurious properties, the dust is of a poisonous character, which leads to such diseases as lead poisoning, phosphorus poisoning, anthrax poisoning, and the like. For example, I show you a respirator recommended to be worn by workers in the carshops and similar industries where paint is dry sandpapered, and where, if this is not worn, the result is lead poisoning. Dry sandpapering of lead paint has been largely abolished in foreign countries.

All varieties of dust that are in a general way the result of the occupation are comprehended under the general term "industrial dust," and may be defined as "such occupations as expose to continuous and considerable inhalation of metallic, mineral and vegetable fibre dust, and in which the evidence is at least fairly conclusive that the resulting disease liability and mortality from consumption and other respiratory diseases is above the average of occupied males generally."

Without going into tiresome details in quoting authorities to prove that dust is a cause of disease, let me say briefly that it is the consensus of skilled opinion that it is, and that a study* of the occupation mortality statistics of the United States census, 1904, United States census for 1900, occupation mortality statistics of

*Bulletin Bureau of Labor, Nov. 1908, p. 643

Rhode Island, similar statistics for England, Wales, the Prudential Life Insurance Company of America, as set forth in the Bulletin of Labor, Department of Commerce and Labor, November, 1908, conclusively prove that dust is one of the important causes of disease and is one of the greatest enemies of the workingman. Dust may be organic or inorganic, soluble or insoluble, and the effects may be chemic, toxic or mechanical.

The following is a more or less arbitrary grouping of the dusty trades, since all occupations involve exposure to more than one particular dust:

Group 1. Exposure to metallic dust: Grinders, polishers, tool and instrument makers, jewelers, gold leaf manufacturers, brass workers, printers, compositors, pressmen, engravers.

Group 2. Exposure to mineral dust: Stone workers, marble workers, glass blowers, glass cutters, diamond cutters, potters, cement workers, plasterers, paper hangers, molders, core makers, lithographers.

Group 3. Exposure to vegetable fibre dust: Cotton ginning, cotton textile manufacture, spinners, weavers, hosiery and knitting mills, lace making, hemp and cordage manufacture, manufacture of jute and jute goods, paper manufacture, cabinet makers, wood turners and carvers.

Group 4. Exposure to animal and mixed fibre dust: Furriers and taxidermists, hatters, silk manufacture, woolen and worsted manufacture, carpet and rug manufacture, shoddy manufacture, rag industry, upholsterers and hair mattress makers.

A thorough study of the statistics mentioned, in accordance with the most approved statistical methods, is set forth by Dr. Frederick L. Hoffman in the Bulletin of the Bureau of Labor, No. 79, and from which I quote the following statistics of consumption in each of the four groups named:

METALLIC DUST.

"It is evident from the foregoing observations and statistical data relating to a sufficient number of representative employments with exposure to metallic dust, that the health injurious effects of such exposure are reflected in the comparatively small proportion of persons of advanced years, a high general death rate, and very high specific death rates from consumption and other respiratory diseases.

MINERAL DUST.

"It is evident from the foregoing evidence and statistical data relating to a representative number of employments with exposure

to mineral dust, that the health-injurious effects of such exposure reveal themselves in a high general death rate, especially at ages 35 or over, and with correspondingly high specific death rate from consumption and from other respiratory diseases at ages 35 or over, by which time the dust inhaled has begun to show its fatal effect.

VEGETABLE FIBRE DUST.

"The summary of the table shows that the mortality from consumption among employes in this group of occupations is very much higher at all ages than would be normally expected.

ANIMAL AND MIXED FIBRE DUST.

"The mortality from consumption of employes in this group of occupations is from 50 to 100 per cent higher at all ages than would be normally expected."

In a paper read at the Sixth International Congress on Tuberculosis, Mr. Hoffman, limiting the discussion to industrial insurance mortality experience, says: "When all occupations for which the information is available inclusive of many others than the thirty employments considered in this discussion, are combined, proportionate mortality from consumption is 28 per cent of the mortality from all causes at ages of fifteen years and over.

"In the group of occupations exposing chiefly to inhalations of metallic dust the proportionate mortality from consumption was 37.4 per cent. Animal and mixed fibre dusts, 32.3 per cent, and exposures to mineral dust 28.6 per cent.

"At the ages of 25 to 34 years the mortality was:

Metallic dust	56.7%	of deaths from all causes.
Vegetable fibre dust.....	53.3%	of deaths from all causes.
Organic dust	50.1%	of deaths from all causes.
Animal and mixed dust.....	49.7%	of deaths from all causes.

"At ages 35 to 44 years the mortality was:

Metallic dust	43 %	of deaths from all causes.
Organic dust	36 %	of deaths from all causes.
Animal and mixed fibre.....	40.4%	of deaths from all causes.
Vegetable dust	39.8%	of deaths from all causes.

"Hoffman estimates the wage earning population in 1908 at 31,768,943, and assumes a consumption death rate among this element of the population at 2.2 per thousand, this making the number of deaths approximately 69,892, and points out that by intelligent factory inspection and control it would be possible to cut this down to 1.5 per thousand, with an annual saving of 22,238 human lives, and he estimates the total economic gain at \$3,080 for each avoid-

able death of a wage earner from consumption, representing the enormous total of \$68,493,000 of the probable saving in years of adult human life."

It is estimated* that in the United States in the year 1910 the number of wage earners of both sexes of fifteen years of age and over was approximately 33,500,000. Based on the German experience of 8.5 days' sickness per person per annum, and since there are reasons for believing that the sickness in this country would not be less, we see that there occurs approximately 284,750,000 days of sickness per annum among the wage earners of this nation. Reckoned in another way, according to the German statistics and experience, the average duration of a case of sickness is about 20 to 21 days. Multiplying the number of wage earners by 21 gives us approximately the same as the above, 281,400,000 days of sickness. Assuming the loss to be approximately \$1.50 per day, the monetary loss in diminished wages on account of accident and sickness in American industries in 1910 may be conservatively placed at \$427,125,000, and if we add one dollar per day for sickness expense, including doctors' bills, medicines, nurses, etc., we have the additional cost of \$284,750,000 per annum. If to this be added 50 cents per day as the loss to the industry, we have \$142,375,000. Combining all these aggregates, we have the enormous grand total of \$854,250,000 per annum.

Estimating the death rate among American wage earners as only ten per thousand, and applying the rate to the 33,500,000 earners estimated for the year 1910, there occur annually 335,000 deaths and one-fourth of these are due to accidents and diseases more or less preventable. (Hoffman.)

The following tables (Oliver, Diseases of Occupation, pages 247 and 348) are along this same line, and are exceedingly valuable. The first is from Sommerfield's book on Diseases of Occupation, and shows the important part played by dust in causing pulmonary tuberculosis:

	Number of Deaths due to Phthisis per 1000 persons	Number of Deaths due to Phthisis per 1000 Deaths
Occupation without production of dust....	2.39	381.0
Occupation with production of dust.....	5.42	480.0
Population of Berlin of same age.....	4.93	323.3

*Mr. Frederick L. Hoffman, First National Conference on Industrial Diseases, Chicago, 1910. Publication No. 10. American Association for Labor Legislation.

Trades giving rise to—		
A. Metallic Dusts:	5.84	470.6
(a) Copper trades	5.31	520.5
(b) Iron trades	5.55	403.7
(c) Lead trades	7.79	501.7
Trades giving rise to—		
B. Mineral Dusts:	4.42	403.4
(a) Pottery Workers	1.40	591.0
(b) Masons	4.26	382.0
Trades giving rise to—		
C. Organic Dusts:	5.64	537.04
(a) Dust from Leather, Skins and Feathers	4.45	565.9
(b) Dust from Wool and Cotton.....	5.35	554.1
(c) Dust from Wood and Paper.....	5.96	507.5
(d) Dust from Tobacco.....	8.47	598.4

MORTALITY FIGURES.

	Comparative Mortality Figures (All causes)	Phthisis	Diseases of the Respira- tory Organs
Agriculturist	602	106	115
Pottery: Earthenware Manu- facture	1,706	333	668
Cutler	1,516	382	518
File Maker	1,810	402	423
Glass Maker	1,487	295	445
Copper Worker	1,381	294	406
Iron & Steel Manufacture..	1,301	195	450
Stone Quarries	1,176	269	307
Brass Worker	1,088	279	273
Chimney Sweep	1,311	260	291
Lead Worker	1,783	148	397
Cotton Manufacture	1,141	202	338

When all occupations are combined, including the thirty dusty trades in all ages above fifteen years, the proportionate mortality from consumption is 28 per cent of all mortality.

15 to 24 years, Animal and fibre dust.....	49.9% of all deaths.
15 to 24 years, Metallic dust.....	47.1% of all deaths.
15 to 24 years, Organic dust.....	40.9% of all deaths.
25 to 34 years, Metallic dust.....	56.7% of all deaths.
25 to 34 years, Vegetable fibre.....	53.3% of all deaths.
25 to 34 years, Animal and fibre dust.....	49.7% of all deaths.

The number of deaths from tuberculosis per thousand in the non-dusty trades in Berlin, is 4.93; trades giving rise to tobacco dust, 8.47 per thousand. (Oliver.)

In a general way it may be stated that the death rate from consumption is twice as high in the dusty trades as it is among agriculturists and others engaged in all outdoor pursuits. The waste of life is thus seen to be enormous, and shows that if the consumption mortality alone in the dusty trades could be reduced to that which obtains in outdoor occupations, an enormous number of lives could be saved. Since it is possible by intelligent factory inspection and

control, and with special regard to ventilation, to almost entirely eliminate the dusty conditions injurious to health and life in our factories and workshops and industries generally, and that such results are really within the range of practical attainment, nothing within reason should be left undone by the nation, the state, the individual or society, to prevent such enormous needless loss of human life from consumption due to unfavorable, but remediable conditions in American industry.

It is evident from the foregoing that occupational diseases, which are really forms of industrial accidents, involve important serious questions of community responsibility. Some of the conditions are needlessly injurious and others are intolerable. An awakened public conscience is being aroused to accelerate the slowly moving forces for industrial and social betterment. But, ladies and gentlemen, I would not come here to talk to you on this subject and to recite to you this startling array of bewildering figures and statistics, were it not for the fact that our studies have led us to certain conclusions concerning occupational disease, and that there is great encouragement to be found in the character of the forces we find lined up together in this fight, encouragement in what has been accomplished, greater reasons for encouragement in what we feel sure, can and will be accomplished in the future in the prevention of unnecessary occupational disease and death. Let us very briefly view this subject in the light of history.

HISTORICAL.

Factory legislation in England began with the industrial revolution. The substitution of steam for water power so changed the industrial conditions as to make the health of the people a matter of state concern, and of state control, as it was found that children and women and unskilled labor could be used in running the machines, and it was found necessary to prevent the exploitation of child labor and to protect those who were too weak to protect themselves. Although the exploitation of child labor is a dark spot on the page of the world's industrial history, it is to the credit of Great Britain that she was the first to move in the matter, and was a pioneer in industrial legislation, although it is a far cry from the date of the Peel Act, 1802, the beginning of factory legislation in England, to the passage of the Workmen's Compensation Act of 1906.

Because of the physical effects of illiteracy, in the exploitation of child labor, factory legislation has resulted in a gradual restriction of the freedom of the individual and his subjection to state control.

The events which stand out prominently in this one-hundred years of industrial legislation in England are curtailment of children's and women's labor, shortening of hours, improvement of hygienic conditions under which labor is carried on, especially improvement in the hygiene of dangerous trades, restriction of the power of employers, and the transference of much of this power from the employer to organized labor, and the individualism is subordinated in considerable measure to general requirements.

The greed and poverty of parents and the avarice of employers both fostered the employment of women and children, and permitted unhygienic surroundings to be tolerated both at home and abroad. For example, in our own country, the first factory act was passed in New York in 1886 and here, as in England, child labor and female labor questions were the early storm centers, and the active compelling influences came from the labor organization and the philanthropic societies.

In this work Italy has been one of the most progressive of the European countries, and at Milan is situated the only occupational disease hospital in the world, and in that city next year, May 27th to July 1st, is to be held a great Congress for the purpose of studying occupational diseases, industrial hazards, industrial sanitation and hygiene.

In Europe one of the most important, intelligent and progressive bodies engaged in this work is the International Association for Labor Legislation, already referred to.

UNITED STATES.

The first comprehensive American official investigation into the sanitary conditions of factories and other establishments where persons are employed, was made by the Massachusetts State Board of Health in 1907, and, while important reforms have followed this investigation, including the employment of children and the medical supervision of children, the investigations are quite limited in their usefulness, because of important omissions.

Two of the chief agencies are the American Association for Labor Legislation, and our Federal Bureau of Labor. Of course, it is impossible to enumerate all the state, municipal, society, and individual agencies that are rendering splendid service in the work.

ILLINOIS.

In 1907, the Illinois Commission on Workingmen's Insurance recommended to the governor and the legislature the "appointment of a competent commission having the power and the means to

make a thorough study of the kinds, causes and extent of diseases among work people and the most modern methods of protection, prevention and insurance." This suggestion was accepted by the legislature and a joint resolution (House joint resolution No. 16, 1907) was passed in March, 1907, which created a commission on occupational diseases. This commission was appointed by Governor Deneen, and I had the honor of being elected its president, but, owing to various complications relating to the appropriation bill, the commission did not actually begin work until the spring of 1910, although the secretary, Prof. Charles R. Henderson, of the Chicago University, had been collecting materials for several years.

I will not go farther into the details regarding the plan, scope, purpose and methods of procedure, than to say the scope was broad, the general purpose was to discover and record the facts, that the procedure was by a division of labor, the ultimate results of our report to the governor and the legislature being the enactment of a law which was approved May 26, 1911, and in force July 1, 1911, and entitled, "An act to promote the public health by protecting certain employes in this State from the dangers of occupational diseases, and providing for the enforcement thereof."

This law provides, among other things, that workers in lead, zinc or poisonous chemicals shall be provided, without cost to themselves, with proper working clothing which they are required to wear; approved respirators which the workers are required to use; all employes shall be examined by a licensed physician and he shall report to the State Board of Health the presence or absence of any disease due to the industry, and the State Board of Health makes a report to the Illinois Department of Factory Inspection; lavatories, dressing rooms, wash rooms, towels, soap, clothes presses, etc., employes are prohibited from eating or drinking in work rooms in which poisonous processes are carried on, and provision shall be made and maintained for suitable eating rooms, together with an abundant supply of wholesome drinking water in sanitary closed receptacles, all without cost to the employes.

The employers are also compelled to provide and maintain adequate devices for carrying off poisonous and injurious fumes and dust, the floors are to be kept smooth and hard, and no sweeping is permitted during work hours, except where floors are dampened to prevent raising of dust.

In emptying of flues adequate devices must be installed and maintained to prevent dust; hoppers are to be provided with hoods

or covers, and means must be provided for drawing away the poisonous fumes or gases.

Enforcement of the provisions of this act is in the hands of the State Department of Factory Inspection; the posting of notices is provided for, and in such languages as may be necessary to make them intelligible to the employees. A penalty of from \$10 to \$100 is provided for after conviction for the first offense, and from \$50 to \$200 after conviction for each subsequent offense. Finally, a right of action shall accrue to any one whose health has been injured by any willful violation or willful failure to comply with the provisions of this act; and in case of loss of life, right of action shall accrue to the widow or lineal heirs or any other person or persons who were, before such loss of life, dependent for support upon such deceased person, for a sum not to exceed ten thousand dollars, provided such action shall be commenced within one year of the death of such employe.

It is thus seen from a study of this question that the present attitude toward industrial disease is that industrial disease is an industrial accident and should be classed as such, and compensation should be provided the same as for accidents. England, after many years of experience with her compensation act, has recognized this principle, and it has also been established in other European countries. In other words, if a workman is incapacitated by disease contracted in his trade, and caused by his trade, he is entitled to compensation precisely in the same way as if he had been disabled by accident.

Illinois has the proud distinction of having the only occupational disease law in the United States, at least the only one in which there is any supervision of the employer. The importance of this is shown in the fact that the orders issued by the State Factory Inspector since July 1, 1911, have resulted in changes costing the employers over \$300,000. Five other States, namely, California, Michigan, Wisconsin, New York and Connecticut, have laws requiring all physicians to report all cases of occupational disease coming under their care, to their respective State boards of health. The Illinois law requires amendment in at least one respect. At the present time, as I have already stated, it requires that physicians making monthly examinations of employes for the plant, shall make report to the State Board of Health. It should be amended so that all employers shall report the results of all examinations of their factory physicians to the State Factory Inspector, and all physicians shall report all cases to the State Board of Health.

But permit me to digress here for a moment to tell you of other things that Illinois has done for her citizens along this line. Ten years ago Illinois was at the bottom of the list of states, so far as factory inspection and laws for health, comfort and safety of employes and occupational diseases were concerned, and now it is at the top.

During the administration of Governor Deneen the following laws have been placed on the statute books, thus placing it at the very front rank of all the States in the enactment of wise, progressive public health legislation.

We have in this State the following laws charged to the Department of Factory Inspection for enforcement:

A very broad and effective child labor law, enacted July 1, 1903.

A law regulating the manufacture of garments and wearing apparel, enacted July 1, 1893.

A law regulating the manufacture of ice cream and butterine, enacted July 1, 1907.

Metal polishing and grinding machinery law, enacted July 1, 1897.

Structural iron on buildings and the overseeing of and issuing of the necessary orders for the protection of life and limb of employes engaged in the construction and erection, repairing or alteration of buildings, bridges and viaducts, enacted July 1, 1907.

And the law prohibiting the working of females for more than ten hours a day in mechanical and mercantile establishments, factories, laundries, hotels, restaurants, telegraph or telephone establishments or office thereof, or in any place of amusement or by any express or transportation or public utility business or by any common carrier or in any public institution, incorporated or unincorporated, enacted July 1, 1909, amended July 1, 1911.

An act to promote the public health by protecting certain employes from the dangers of occupational diseases. This law is the first of its kind in the United States, and was enacted July 1, 1911.

Illinois also has a new Workmen's Compensation Law, passed by the last session of the General Assembly. Illinois was one of the first states in the Union to take up the study of this important subject, and was the first state to originate an elective compensation law, enacted ———, in effect May 1, 1912.

Health, Safety and Comfort Law, enacted January 1, 1910.

Permit me to digress here to express my admiration for the

splendidly efficient manner in which the above laws have been enforced by Mr. Edgar T. Davies, Chief of State Factory Inspection, especially in view of the fact that the Legislature made no appropriation whatever for the Ten-Hour Law, the Health, Comfort and Safety, or for the Occupational Disease Act.

In addition to this, we have the free distribution of diphtheria antitoxin by the state, by means of which we have been able to save the lives of three to five babies per day for the last five years, and at a cost to the state of approximately \$13.00 each, this being a per capita per annum of three-tenths of one cent.

At a meeting of the First National Conference on Industrial Diseases, held at Chicago, June 10, 1910, the following resolution was unanimously adopted:

"Resolved, That a special committee of five, who shall have power to add to their number, be herewith appointed by the American Association for Labor Legislation to call upon the President of the United States, and to present to him at an early date a carefully prepared memorial of facts and conclusions, emphasizing the urgent necessity and practical expediency of a national expert inquiring into the whole subject of occupational or industrial diseases; their relative degree of frequency in various trades and occupations; the causes responsible for their occurrence; the methods desirable and practicable for their prevention or diminution, and all other matters having a relation thereto, including methods of amelioration and relief."

The committee, consisting of H. B. Favill, chairman, and Mr. Frederick L. Hoffman, David L. Edsall, Frederick N. Judson and Charles R. Henderson, were appointed by the President, Prof. Henry W. Farman of Yale University, and they presented the memorial to the President of the United States on September 29, 1910, in which the urgent need of a national inquiry was pointed out, and they estimate the "cost of a comprehensive inquiry of this kind, extending over a period of perhaps two or three years, would probably not be less than \$50,000, nor more than \$150,000, according to the plan and scope of the proposed investigation."

In his special message to Congress, February 2, 1912, President Taft recommended the creation of a Federal Commission on Industrial Relations. A committee on Industrial Relations, under the leadership of Mr. Edward T. Devine has been appointed to secure the appointment of such a commission.

LINCOLN MEMORIAL COMMISSION ON INDUSTRIAL RELATIONS.

In this connection I wish to make the following suggestion.

There has been much agitation and discussion about asking Congress to appropriate the sum of \$2,000,000 for the purpose of erecting a suitable memorial to the memory of Abraham Lincoln. Many suggestions have been made concerning the character of the proposed memorial. Some favor the erection of a monument in the city of Washington. Others propose a great highway, presumably for automobiles. I would respectfully propose the appointment of a Federal Commission as recommended by President Taft, to be known as the Lincoln Memorial Commission on Industrial Relations, that this be a permanent commission, and that Congress appropriate the sum of \$2,000,000, the income from which, \$100,000 a year, could be used for the purpose of the commission. Lincoln emancipated a race of slaves. What greater monument could be erected to his memory than the creation of a commission which shall rid us of the slavery of industrial conflicts and the bondage of unnecessary industrial disease. In so doing, I believe we shall be carrying out his wish, "It is for us, the living, to be dedicated here to the unfinished work." . . . "It is rather for us to be dedicated to the great task remaining before us."

Investigations hitherto made, whether private, state, or municipal, have been fragmentary, incomplete and, at best, only partially representative or typical. It is high time that the hysteria and sensationalism be eliminated from this subject and that a commission of wise, public-spirited, well-informed men shall, as the President said in his message, "make a searching and comprehensive inquiry into the subject of industrial relations which shall be authoritative, balanced and well rounded, such as only the Federal Government can successfully undertake."

Industrial problems, in their medical aspect, not only concern the individual, but society and in many instances they control the future of the race.

The present age is marked by social, benevolent, and parliamentary (legislative), schemes which are meant to dispense industrial justice and to provide greater personal opportunities. To do all this, it must be progressive.

Each successive year brings with it new problems, and thus there will always be work for the commission.

SOME OF THE URGENT NEEDS.

The difficulties in the way of securing social betterment legislation which finds its inspiring impulse in the humanitarian sympathies of our time and aims to use the powers of government to elevate,

as far as may be, the poor unfortunate submerged classes of our industrial civilization, are inherent in our form of government. We have, under our federal constitution, a sovereign national government with a rigid constitution reaching directly the individual citizens in many or perhaps most subjects of national concern, and forty-six sovereign states, each with its own rigid constitution, and, as Chief Justice Marshall put it, each is sovereign with respect to the right committed to the other, and all public health matters belong to the individual states, and are a part of the "police power," so that the solution of these public health problems must in the main, depend upon legislation in the several states. And such legislation should be so framed, if possible, that the increased burden in the way of added cost of production will be compensated for by the increased effectiveness of labor.

Concerning this point, Mr. Edgar T. Davies says:

"And this voluntary action on their part illustrates again the point which we have already made that education is often more important in arriving at proper safety standards than legislation. The modern, progressive manufacturer, is beginning to learn as a matter of fact that, viewed strictly from a point of industrial economics, every reasonable measure should be adopted to promote the safety, health and welfare of his employes, because his experience has demonstrated that under such conditions he will secure a larger increase in efficiency and a better quality of workmanship in the manufactured article which he produces, and a general improvement in the relations which exist between the employer and employe, resulting in a spirit of harmony and contentment which will go a long way towards preventing labor trouble and wage disputes, and other disturbing conditions which have heretofore been all too common in our industrial life."

LAWS.

Future laws should be based on:

A complete knowledge of all the facts, based on federal investigation. They should be prompt, based on permanent conditions rather than on emergencies, uniform, so far as they relate to economic conditions and constitutional provisions; they should not express class feeling that might lead to class prejudice, in order that we may best "promote the general welfare and secure the blessings of liberty to ourselves and our posterity," a liberty so regulated as to prevent one individual or group of individuals from abusing their liberty to the harm of others; a tendency to order rather than freedom, of conserva-

tive progress, a liberty of the race rather than the individual, but always with an equality of opportunity for all.

Every law should be preceded by a careful investigation of all the economic, industrial and medical facts.

One of the essential prerequisites is an adequate registration of vital statistics, and a uniform immediate reporting of industrial diseases as well as industrial accidents, such as the standard certificate of Industrial Diseases of the New York Department of Labor. This will make increased work for the physician, and the medical profession is only just beginning to realize the social side of this work.

While the relationship to the public health may not be so readily apparent, it seems to me as much the duty of the physician to report cases of industrial diseases as it is to report any of the infectious diseases. The question of compensation should not enter at all. The physician receives a great part of his education at public expense; he is relieved of certain burdens, such as jury duty; and he alone has the information, so that it becomes his social duty. It should be the ambition of every true physician to do his duty well—to be a true physician “who holds his life at the service of the state.”

OTHER URGENT NEEDS ARE.

1. Enlargement of the medical curriculum to include occupational diseases.
2. Clinics on industrial diseases.
3. State factory inspection by all states.
4. Compulsory examination of all workmen.
5. That employers' liability and compensation acts shall be passed by all states.
6. The proposed Congressional Commission should be appointed for the purpose of ascertaining the facts and publishing them widely, as it is only by this means that a wise, humane public sentiment may be aroused.

Wise and efficient legislation should seek to effectively prevent what charity has only partially and ineffectually palliated. We need to educate the people to a realization of the fact that mortality is not fatality, that “biologic engineering” shows that the average-duration and breadth of life may be increased, that the death rate does not follow some “inexorable law,” but varies in different countries, depending largely on a knowledge of facts, and the extent to which methods of prevention, of known and proved value, are utilized.

Irving Fischer estimates that fifteen years could be at once added to the average duration of life in this country, by applying the science

of the prevention of disease, and claims that more than half of this additional life would come from the prevention of tuberculosis, typhoid and five other diseases, the prevention of which could be accomplished by the use of purer air, water and milk; in a word, if present knowledge were better applied.

We need not alone legislation, but education, and with this education not alone higher ideals, but that spirit which is back of, and creates ideals,—more of the spirit of Him Who dreamed of a time when “all men’s good shall be each man’s rule, and universal peace shall lie like a shaft of light across the sea.” This spirit will do more than laws, and will enforce them for the good of all.

This humane public sentiment must include corporations. They must be taught that the time has come when they are to cease being mere accumulators of wealth, mere selfish, self-centered organizations seeking their own aggrandizement, and must assume new duties and new responsibilities, awaken to new opportunities and new relationships, and become more human, as well as humane, and with the full assurance that it is in the line of economic efficiency to do so.

One of the great, urgent public health needs of Illinois is a suitable births and deaths law, in which the facts in regard to the occupation are brought out clearly by the Budapest system of classification of causes of deaths, or by the one recommended by the New York Department of Labor. This should be adopted by the Vital Statistics Section of the Bureau of the Census, and then, by each state and city, there should be the adoption and use of the International System of Classification of Causes of Death, the advantages being not alone the obtaining of adequate information in regard to the specific occupation followed, but the great advantages of uniformity and comparability.

CONCLUSION.

It is coming to be more clearly recognized that industrial diseases and industrial accidents are simply two different forms of industrial risks and that they should be dealt with together, and in England and other European countries the principle is now firmly established that a workman is entitled to compensation if he is incapacitated by a disease, contracted in his trade and due to his employment, exactly in the same way as if he had been disabled by an accident.

In this warfare we should find business, labor, the government, the social worker and the philanthropist and the courts all joining hands with the scientist to work out this great problem, for the good

of all. Especially should labor and science work earnestly and harmoniously together; the former because of its urgent need, and the latter because of the character of the information it can furnish. But, without wise legislation and honest execution, without decisions based on sympathetic knowledge and broad principles, the best results cannot be attained. In a word, the watchword in industrial hygiene is regulation. "We must not educate, elevate, conserve, foster, assist with one hand, and poison with the other."—(Favill.)

But the signs of the times are hopeful ones. Gradually old precedents based on individualism are going by the board, the courts are beginning to get a new perspective of life, owing to the fact that some of our judges are studying economics as well as law, and recent court decisions clearly indicate that protective labor legislation will be sustained as a legitimate exercise of the police power, when it is made clear that conditions justify such interference on the ground of health. This is a warfare in which science, labor, business enterprise and the government must all unite in order that there may be progress all along the line.

Encouragement is found in the fact that the up-to-date physician is taking a keen interest in all sociologic problems, at least so far as they relate to medicine. He is beginning to look far beyond the individual patient and his disease to causes, to the environment, and to the relationship of the individual to society, and society to the individual, and is rapidly developing that comprehensive breadth of view and training which shall adequately fit him for the new and larger demands that are to be made upon his intelligent service by an enlightened, appreciative, co-operative public. Additional encouragement is found in the fact of the wonderful and unexampled awakening of the public to a sense of responsibility in regard to conditions of labor and unhealthful trades.

Encouragement comes from an increasing interest of the people in social affairs.

Further encouragement is found in the fact that the conviction is rapidly growing that the most important single phase or element of labor legislation is health legislation, and, also, that industrial hygiene is receiving such a share of attention and recognition both at home and abroad.

Encouragement is found in the fact that, while industrial legislation is in the interest of health, it is, at the same time, in the interest of industrial economics.

Encouragement is found in the fact that health legislation is

but a part, though a most important part, of the great movement for the conservation of natural resources.

We find the unfortunates demanding our care, and we are gradually going back to the causes of things, seeking to prevent rather than to cure, seeking not simply the rights of the workers as a class by themselves, but the welfare of society as a whole.

EXPLOITATION.

Exploitation the world has always known. Whether in the form of colonization, colonial trade, child labor, exploitation of women slavery, the reckless disregard of the rights of others by corporations, the greed of capital, all through recorded history it has written a story of stupid waste, brutal injustice, ruthless tyranny, military or commercial conquest; all through recorded history we find this using up of physical resources and of human energy in reckless disregard of individual rights and interest. Against injustice, hardship and abuse we find men struggling bitterly, often hopelessly, and frequently blindly. Exploitation and the struggle against it is the magic key to much of human history.

CONSERVATION.

Over against this word exploitation we must write a comparatively new term, much seen in the public prints of the present day. Now "conservation is not simply a struggle of those exploited, in their own defense, but is rather a new social, a new economic policy, a new way of looking at all human resources, a new basis for social relations, even for international relations, thus coming to stand for every definite thing."—(Devine.)

Our government has wisely determined, not alone in the interests of posterity, but in the interests of ourselves and our children, to put an end to the exploitation of our forests, our minerals, our water powers, etc. This is demanded in the interests of justice, dictated by principles of sound public economy and warranted by our laws, and the constitution under which we live. But we have in large measure forgotten that the "life is more than meat and the body more than raiment," and that there is a human side to this conservation question; that the bodies and the lives of our people should no longer be exploited, but conserved. Mr. Devine has well said: "The most important part of conservation, merely from the standpoint of dollars and cents, is the preservation and development of strong healthy bodies, a decent, self-respecting and dignified status for the workingman, and a hopeful outlook into the uncertain but friendly future." Life should no longer be regarded as a mere in-

strument for the production of wealth. The remedy that Mr. Devine suggests is "that control and the penalty for its failure be united; that compensation for life destroyed and for limb lost and for health injured, as a direct result of the necessary risks of the industry, shall be made by those who control industry in the first instance, and borne eventually, as the risks of injury to plant and machinery are borne, by the consumer of the product. In other words, the conservation of life requires that the financial loss involved in death and injuries come from the undivided profits of the industry, and that employers' liability insurance shall be, not as at present an insurance against the casualty of a law suit, but real insurance against the casualties of industry." And the dominant note in all our work should be, not alone compassion for the victim of occupational disease, not alone charity for him and for his family, but the insistent scientific spirit which seeks to learn why workers in certain industries sicken and why others die, and to strike effectively at those industrial conditions, utterly beyond the control of the individual, of which he is a victim and for which he is not responsible.

It is an encouraging sign of the times that there are broad-minded, warm-hearted, hard-headed business men in every great industry who have recognized the correctness of the position, and who realize that industrial progress has reached a point long since which makes the exploitation of the weak unnecessary. Our twentieth century civilization is answering, with a more emphatic affirmative than ever before, the query of Cain, "Am I my brother's keeper?"

AN IMPORTANT LEGAL DECISION.

By CHARLES ALLING, JR.,
ATTORNEY FOR ILLINOIS STATE BOARD OF HEALTH.

The Littlejohn College and Hospital, a corporation under the laws of Illinois, maintains a college at 1420 West Monroe Street, and a hospital at 1408 West Monroe Street. It was formerly called The American College of Osteopathic Medicine and Surgery, but on October 4th, 1909 adopted its present name. The Illinois State Board of Health investigated it in 1907 and 1908 and found it so deficient that it was refused good standing. On November 22nd, 1910, the institution again applied, not for investigation, but for good standing. This was refused on January 18th, 1911. The institution filed a petition for mandamus in the Circuit Court in February, 1911, to compel the Board to place the institution in good standing. The case was tried on April 17, 18, 19 and 22 by Judge Charles H. Bowles, of the City Court of Chicago Heights, sitting in the Circuit Court in Chicago. The College demanded a jury, and on the last named day, the jury took the case under advisement for the entire afternoon, and on April 23rd, made findings substantially as follows:

1. The Littlejohn College and Hospital did not comply on November 22nd, 1910, with the Schedule of Minimum Requirements adopted by the Illinois State Board of Health.

2. It did not then have such facilities for teaching and imposing the requirements for lectures, laboratory work and clinics as obtained as a practice in the majority of the medical colleges in the United States.

3. It did not have such methods of teaching and clinical instructions as then prevailed in the majority of medical colleges of the United States as required by said Minimum Requirement, and it did not possess a sufficient and competent corps of instructors.

4. That therapeutics was not then taught in said college except so far as should be known in osteopathic practice.

Every finding was in favor of the contentions of the Illinois State Board of Health. The college has made the customary motion for a new trial, which undoubtedly will be denied by Judge Bowles, and he will then enter judgment refusing the writ of mandamus.

Extensive changes in the faculty and course of instruction will have to be made before the Illinois State Board of Health will ever admit this institution in good standing.

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AND
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Editorial.

PREVENTABLE DISEASES.

Three hundred and four deaths from preventable causes out of a total of 639 deaths during the week ended May 4, 1912, is the report of the Department of Health. The diseases here classed as preventable are typhoid fever, measles, scarlet fever, whooping cough, diphtheria, cerebrospinal fever, tuberculosis, pneumonia, diarrhea, congenital defects, accidents, smallpox, tetanus, and pellagra. It is not claimed that these deaths should have been prevented. We have not yet arrived at the stage of progress in hygiene that prevents all preventable deaths, but we have progressed most satisfactorily. A few years ago the deaths were very much greater than now, and we may confidently hope that a few years hence the death rate will be still further lowered.

If these deaths from preventable diseases had not occurred in the week mentioned above, the mortality rate would have been below

8 per 1,000, instead of 14.6 per 1,000. In this same week, 110 children less than one year old died. If these children's lives had been saved, or what amounts to the same thing if a prudent foresight had prevented their being born at all, the mortality rate would have been but a fraction over 12 per 1,000, instead of 14.6.

It is less than twenty years since the Department of Health issued the first printed circular of instruction upon the hot weather care of infants and young children. The wisdom and force of this educational method kept up since then shows a beautiful fruitage in an article upon baby care in the May 4th Bulletin of the Department of Health, from the pen of a 13 year old school girl. It would be a credit to the principal of the school instead of a pupil. This evidence of the spread of knowledge indicates that the mortality rate for Chicago twenty years hence may be 10 in the 1,000 instead of 14.6. We confidently believe it will. There appears to be only one thing that can prevent it and that is the increasing growth of cities and the tendency, if not the necessity, of building habitations so high and so broad that they make tunnels of the streets and dungeons of living rooms and offices, and shut out the life-giving sunlight and air.

PROVIDENT HOSPITAL.

Provident Hospital, situated at 36th street and Dearborn avenue, Chicago, with a capacity of sixty-five beds, is a hospital for colored people. It is one of the best managed and most useful hospitals in the city. Its location is central to the largest group of Chicago's sixty thousand colored people. The colored people are naturally very proud of their hospital; they are loyal to its best interests and support it generously, considering their limited means. It is the only hospital in the northwest where a young colored physician can become an interne.

The institution maintains a training school for nurses, whose pupils are all colored girls and come from different states, but largely from the South. Some of the graduate nurses are now the heads of useful institutions among their people in the South and all are leading lives of usefulness and spreading the gospel of sanitation, healing, cleanliness and right living, where such teaching and practice is sadly needed. A dispensary is also maintained at the hospital and outdoor treatment has been given to 80,000 people in the last sixteen years. A milk laboratory is maintained, where pure milk is modified

to meet the need of individual infants and dispensed to the neighborhood. Recently a branch of the municipal sanatorium for the prevention of tuberculosis has been established in the hospital.

The mortality rate among colored people is higher than among the whites. The average wage of the colored man is less than that of the white man for the same service. The cost of living is higher for the colored people than for the whites; especially is this true of rents. This crowds them together and makes their housing condition bad.

The Provident Hospital, with its various activities, is the most useful of all agencies working among this happy and optimistic race to build them up and enable them to meet the struggle for existence and advancement in competition with the white race.

The Provident Hospital as a means of maintaining the efficiency of the colored people should appeal to the white man of means with especial force. Generous as past donations have been there is present need of help and immediate steps should be taken to provide liberally for the future.

FRESH MILK.

In an interesting study of the effect of milk upon infant life, made by the Rockefeller Institute of New York, four groups of infants were made in accordance with four different grades of milk. Infants fed upon milk that was extraordinarily bad had a high mortality rate, while those fed upon pure clean milk grew fat and healthy. The proportion of mortality was in accord with the grade of milk used.

These facts are not new to those who have studied the question, but the Institute has done a real service in giving the public anew the facts in such convincing detail. Too little attention is given to the age of milk in all such studies. In many cities and towns milk fresh from the cow can be had twice a day and need never be more than twelve hours old, while in all cities some milk for infant feeding can be had that is only twelve hours old and none of it need be more than twenty-four hours old. Physicians and sanitariums, upon whom rests the responsibility of educating the public in infant feeding, have not given the age feature of babies' milk the attention the subject deserves.

WART HOSPITAL.

From an item published in a Chicago daily during the strike it seems that Hahneman Hospital of Philadelphia has advertised in the newspapers of that city for one hundred men and women afflicted with warts to come in and be treated. The treatment, we are informed from the same source, consists of hypodermic injections of tincture of arbor vitæ; also, that preliminary reports show beneficial results in every applicant and that later a "long report will be issued for the benefit of the medical world."

This announcement should give renewed hope to the warty and should not be lightly regarded by the wartless, for the wartless may become warty without notice. The preliminary report of the hospital is reassuring to the warty ones and all will look confidently forward for the issue of the "long report" that is promised. Dermatologists both within and without the fold will rejoice at the birth of this new specialty within a specialty, as it adds dignity and importance to their field of endeavor.

The good tidings for the warty comes properly from Philadelphia, the cradle of liberty, from whence came the thunderbolts of national independence. Moreover, it further rivets the attention of the world to the fact that it is the city of brotherly love, as nobody loves warts. It may be presumed that the injection of tincture of arbor vitæ will create a wart within a wart and thus uphold the doctrine of *similia similibus curantur*, for the name of the founder of this creed has been appropriated by the hospital which now essays the destruction of warts. The feverish expectancy upon this point must await the advent of the "long report."

Space and propriety forbids any discussion here of the varieties or causes of warts. A word to the warty is sufficient.

 "GENTLEMEN UNAFRAID."

As a tribute to the memory of the noble men and women who met death in the terrible disaster to the "Titanic," we republish the following editorial from the Chicago Daily Tribune, which is a literary gem. Its beautiful diction and soul-stirring sentiments will appeal to everyone:

"As the first terrible shock of the Titanic tragedy passes, that compensation which the law of life ordains rises out of the encompassing darkness.

"For there is compensation in this disaster, and a noble consolation even for those who are most cruelly stricken.

"The loss of so many precious lives, the anguish of so many living hearts, the waste and suffering of it all, are heavy in the scale. But heavier still by far is the pure gold of heroic sacrifice, the pure gold of unflinching courage in the face of ghastly death, the pure gold of love and devotion which human nature poured so generously into the balance.

"The beautiful, tragic picture of the venerable couple, Mr. and Mrs. Straus, with arms about each other, waiting the end they had chosen to meet as they had lived together, will not be soon forgotten. And there were other women who would not go, and others still who went only because they were deceived, and others who went in anguish because there was a higher duty to live.

"There were the men who stood back while the boats filled and death rose to engulf them. There was Astor, who only a few months ago was the object of the bitterest denunciation, and Astor was helping the women and children into the boats, bravely cheering them—and waiting quietly like a true gentleman for death—Astor, who made good.

"There was Butt, American soldier, resolute, alert, working with the officers of the ship to help the weak to live, thinking of service, thoughtless of self. He showed how an American officer can die.

"There was Phillips at the wireless, Phillips who would not leave till the dynamo was still and the decks awash; and Smith, who braced his men with the proud challenge, 'Be British, men, be British,' who gave the proud order, 'Women and children first,' and died nobly in the great tradition of the Anglo-Saxon sea race.

"We know, too, though there is no record, how the fighting reformer, Stead, went to plumb the mystery he searched so eagerly in life, and we know how stanchly most of these men and these women, distinguished or obscure, met the most terrible test that men and women can meet, the test of separation, the test of life or death.

"The knowledge of their fate is bitter. But the knowledge of how they met it braces the soul.

"How much gratitude we owe to these, our fellow creatures, who in that great crisis proved that man is not base but fine, that the high virtues of heroes are not visions of the dreamer but the common stuff of human life!

"Over the restless waters which cover them as they sleep hovers not despair but the angel of a divine hope, a splendid faith fulfilled in them, a hope for the race who follow on the long path that is the destiny of man."

Book Reviews.

DISEASES OF THE NOSE AND THROAT. Comprising Affections of the Trachea and Oesophagus. A Textbook for Students and Practitioners. By St. Clair Thomson, M. D., F. R. C. P. (Lond.), F. R. C. S. (Eng.). Physician for Diseases of the Throat and Professor of Laryngology in King's College Hospital; Physician to King Edward VII Sanatorium; formerly Physician to the Throat Hospital, Golden Square; Surgeon for Diseases of the Throat and Ear to the Seaman's Hospital, Greenwich, and Surgeon to the Royal Ear Hospital, London. With 18 Plates and 294 Figures in the Text. New York: D. Appleton and Company, 1912. Pp. 791 + XVI. Price, \$7.50 net.

The author of this work needs no introduction as he was for many years physician to King Edward, and was much in the public eye some years ago at the time when King Edward had serious throat and tongue symptoms.

The publisher's statement on the title page is that the work contains "18 plates and 294 figures in the text." As in several instances a number is duplicated, as Figure 105 a, Figure 116 a, etc., and as in many other cases two or more figures are included over one number, the "figures in the text" are materially more numerous than stated by the publishers. Furthermore, as several of the plates contain from two to seven views, the total number of illustrations given figures up to nearly 400, hence the book may be truthfully said to be profusely illustrated. The tints in the colored plates are particularly life like. Many of the figures are diagrammatic, or "semi-diagrammatic," and hence more instructive than when one particular condition or structure is shown. A large proportion of the illustrations are original and new, and therefore more pleasing to the reader. Figures 19 and 80 should be reversed. A list of the plates is given after the table of contents, though a corresponding list of the figures is unfortunately omitted. Under many of the figures is given in fine type a concise description of the essential features shown, which is to be highly commended.

As would be expected from the reputation of the publishers, the work, from a typographical standpoint, is finely executed. The type of the major text is large and clear, so as to be easily read by even those with weakened vision. One of the strongest features of the book, and one of inestimable value to the specialist, is the extensive citation of the literature with references fully given. In no work on

the subject covered has this been so well done since the elaborate work of Bosworth published a quarter of a century ago. In his citations no preference is shown for British authors, as has been too often the custom by British writers. Thomson gives at least as many Continental as British references, and we note with pleasure and satisfaction that American authors are given the consideration they merit. Aside from its intrinsic value in text this work will long remain a choice work for reference, owing to the very complete digest of the literature given, and the full bibliography presented, making it the best resume of the bibliography of the nose and throat extant. While the general index is very extensive, covering nearly forty pages, it would be further improved by a special index of the many authors cited. In addition to the index, and the table of contents the easy finding of the topic sought is facilitated by head lines on each page.

Procedures or features fully described at one place are at other times referred to by page so as to avoid needless repetition and give briefer text. When figures are referred to at a distance from the subject being considered, the page is also given, as "Figure 126 (p. 249)" which greatly facilitates quick reference. Tables of comparison are frequently employed, whereby characteristic symptoms are paralleled or contrasted. The description of several of the important operations (as tracheotomy), which may be required in the treatment of different conditions, are placed together in a special chapter. Operative procedures are lucidly described though at times with a conciseness which presupposes the reader's familiarity with the subject. This criticism particularly applies to the correction of septal deformities. On the other hand, tuberculosis of the larynx, and laryngeal surgery generally, are elaborately and classically considered. Another of the features of the book to be particularly praised is the sections devoted to the nasal sinuses, their diseases and their treatment.

In common with other English text books on the nose and throat, only rubber hand ball devices are mentioned for throwing sprays. It seems strange that as the great value of compressed air supplied by an air tank, and regulated by a cut-off, is fully proven through its universal employment by American practitioners, its use should not have been long ago adopted by our European confreres. The rubber hand ball devices for throwing sprays in office treatments should be relegated to the scrap heap.

This exhaustive work is divided into eleven parts, which in turn are so subdivided as to cover every phase of the subject. Particular

attention is given to basic principles of practice, and to the co-relation between diseases of the nose and throat and those of a general nature.

While in the treatment of the various diseases considered full accord is given to the surgical requirements, there is also given an equal importance to available medical and hygienic aids. Advice as to climatic help is made practical by the naming of the particular baths and spas which are most appropriate for the disease being considered. Therefore as a work of reference Thomson will prove of equal value to either the internist or specialist.

EDWIN PYNCHON.

THE TREATMENT OF SHORTSIGHT. By Professor Dr. J. Hirschberg, Geh. Med. Rat in Berlin. Translated by G. Lindsay Johnson, M. D., F. R. C. S. With Twelve Illustrations. New York: Rebman Company. Price \$1.25.

This book on the treatment of shortsight is also a plea for better school buildings and improved hygiene, with less demand on vision, to arrest the onward progress of myopia. Coming from so high an authority as Professor Hirschberg, it is needless to say, that the book is well worth the attention of every medical man.

ESSENTIALS OF SURFACE ANATOMY. By Chas. R. Whittaker, F. R. C. S. (Ed.), F. R. S. E. Senior Demonstrator of Anatomy, Surgeons' Hall, Edinburgh. Second Edition, Revised and Enlarged. P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia. 1912. Price \$1.40.

A very practical and satisfactory book to both students and practitioners—well arranged, well illustrated, and immensely useful.

PELLAGRA. By George M. Niles, M. D., Professor of Gastro-enterology and Therapeutics in the Atlanta School of Medicine, Atlanta, Georgia. Octavo of 253 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1912. Cloth, \$3.00 net.

A very timely book, written by a most competent authority. The chapters on symptomatology, diagnosis, prognosis and prophylaxis are very good, and the practical man will have no fault to find with the chapter on different methods of treatment. We commend this book highly.

THE TOBACCO HABIT. Its History and Pathology. A Study in Birth Rates. Smokers Compared with Non-Smokers. By Herbert H. Tidswell, Member of the Royal College of Surgeons, England; Licentiate of the Royal College of Physicians, London; Late

House Surgeon to St. George's Hospital and Northampton Infirmary. P. Blakiston's Son & Co., 1012 Walnut street, Philadelphia, 1912. Price, \$1.40.

This is an extreme plea against the use of tobacco, going even so far as to attribute the complications of pregnancy to the fact that the husband was a smoker, likewise sterility, excess of female births, etc. We must confess that we are not convinced that the falling birth rate in the British Empire is due to the tobacco habit, in spite of the various statistics quoted, but we admire the author's good intentions and believe the book will be welcomed by all tobacco haters.

A COMPEND OF HUMAN PHYSIOLOGY. Especially Adapted for the Use of Medical Students. By Albert P. Brubaker, A. M., M. D. Author of "A Text Book of Physiology"; Professor of Physiology and Medical Jurisprudence in the Jefferson Medical College; Lecturer on Anatomy and Physiology in the Drexel Institute; Fellow of the College of Physicians, Philadelphia. Thirteenth Edition, with 36 illustrations. Philadelphia: P. Blakiston's Son & Co. Price, \$1.25 net.

When a book reaches its 13th edition it certainly meets all the requirements for which it is intended. The author's book is primarily for medical students but as it is written by an authority and represents modern physiology to date in a very compact way, we can recommend this compend to physicians also who want to brush up a little on this very important subject.

THE STORY OF A DOCTOR'S TELEPHONE. TOLD BY HIS WIFE. By Ellen M. Firebaugh, Author of "The Physician's Wife." Boston, Mass.: The Roxburgh Publishing Company.

A charming story, well told, which will be specially appreciated by the doctor's wives and daughters, as well as the physician himself. The various incidents related cover all the emotions from the sublime to the ridiculous. All those who have had the good fortune to read "The Physician's Wife" and the things that pertain to her life, published by the same author some eighteen years ago, will be glad to read this new book from her facile pen.

COMPENDIUM OF DISEASES OF THE SKIN. Based on an Analysis of Thirty Thousand Consecutive Cases. With a Therapeutic Formulary. By L. Duncan Bulkley, A. M., M. D., Physician to the New York Skin and Cancer Hospital; Consulting Physician to the New York Hospital; Consulting Dermatologist to the Ran-

dall's Island Hospital, to the Hospital for Ruptured and Crippled, etc. Fifth Revised Edition of the Manual of Diseases of the Skin; 8vo., cloth, 300 pages. Price, \$2.00 net. New York: Paul B. Hoeber, 1912.

The name of Bulkley is so intimately associated with American dermatology that all his numerous friends and admirers will be glad to see this new and revised edition of his famous manual of skin diseases. Fourteen years have elapsed since the last edition and of course, wonderful strides have been made in dermatology. But the author has kept apace of the times, and we can most earnestly commend this book to any physician who wants a condensed manual which is up to date, replete with practical suggestions, and which contains a formulary which is invaluable. Personally, the reviewer can bear witness to the fact that Formulary No. 89, recommended to him by Dr. Bulkley over thirty years ago, is alone worth the price of the book,—a formulary for eczema and allied affections, which has proven of the greatest value in many years of practice.

THORNTON'S MEDICAL POCKET FORMULARY. New (10th) edition.

Containing over 2,000 prescriptions, with indications for their use. In one leather-bound volume. Price, \$1.50, net. Lea & Febiger, Publishers. Philadelphia and New York, 1912.

This formulary is one of the best of its kind. The author has not only been a teacher on pharmacy and materia medica for many years, but has also enjoyed an extensive medical practice and is thoroughly familiar with the requirements of the profession. All the various diseases are classified alphabetically and the indications for each formula are clearly stated, so a choice is readily made. As a pharmacist the author has endeavored to preserve elegance and palatability in the various formulæ suggested. We all have to admit when at our wits end, occasionally, what to do next, that the suggestions of a reliable pocket formulary are often of great service.

A MANUAL OF CLINICAL CHEMISTRY, MICROSCOPY AND BACTERIOLOGY. By Dr. M. Klopstock and Dr. A. Kowarsky of Berlin. In Their "Institut für Medizinische Diagnostik," in Berlin. Only Authorized Translation from the Last German Edition, Thoroughly Revised and Enlarged. Illustrated with Forty-three Textual Figures and Sixteen Colored Plates. New York: Rebman Company, 1123 Broadway. Price, \$3.00.

This is an excellent, up-to-date manual, one which we can cordially recommend to both students and practitioners. It contains

all the essentials required to do good substantial work and is written in a way to make the subject matter clearly understood; in short, a most valuable laboratory guide. It begins with the bacteriological examination of the secretions of the mouth, pharynx, nose and conjunctivæ. Excellent chapters on examination of the sputum, gastric contents and fæces. Very complete sections on the urine and blood. A chapter on bacteriological examination of diseases of the skin, with a concluding chapter on the methods, formulæ of stains and culture methods. A series of colored plates add much to the value of this book. To the general practitioner who has neither time nor inclination for exhaustive works on this subject, a condensed manual of this kind will be of great value.

FOOD FOR THE INVALID AND THE CONVALESCENT. By Winifred Stuart Gibbs, Dietitian for the New York Association for Improving the Condition of the Poor; Teacher of Economic Cookery, Teachers' College, Columbia University; Author of "Lessons in the Proper Feeding of the Family." New York: The Macmillan Company. 1912. Price, 75c net.

It is a pity that a book of this kind could not be given to every family in the land. It would enable the poor to live twice as well as they do now at half the cost, as it teaches what to buy, how to prepare and in what manner to get the best food at the lowest cost possible. The author's five years' experience as dietitian for the New York Association for Improving the Condition of the Poor is the basis of this valuable little book, which also aims to prevent disease by teaching "right feeding and good cooking." We give it an unqualified endorsement.

DAS SUBAQUALE INNENBAD. Von Privatdozent Dr. Anton Brosch, K. U. K. Stabsarzt, unter Mitwirkung von Dr. Otto von Aufschnaiter. Zweite Auflage. Mit 10 Abbildungen im Text. Leipzig und Wien: Franz Deuticke, 1912. Price, 75c.

This is a most interesting description of a form of continuous intestinal irrigation, with an ingenious apparatus which can be used in an ordinary bath tub, or preferably in running water, mineral springs or streams, with regulation of pressure, temperature and exact dosage. It is especially useful in sanitariums. The apparatus is called "Enterocleaner," and the results have been most satisfactory. This treatment is especially indicated in chronic constipation, doing away with the necessity of Lane's operation, colitis, pericolitis, mu-

cosa, certain uterine affections, chronic appendicitis, obesity, sexual neurasthenia, even carcinoma of the rectum. The book is worthy of careful study.

BOOKS AND PAMPHLETS RECEIVED.

THE TOXICITY OF CAFFEIN: An Experimental Study on Different Species of Animals. By William Salant (Chief Pharmacological Laboratory, Division of Drugs) and J. B. Rieger (Assistant Chemist). Washington: Government Printing Office. 1912.

TECHNICAL DRUG STUDIES. By the Division of Drugs. Washington: Government Printing Office. 1912.

THE PASTEURIZATION OF MILK. By S. Henry Ayers, Bacteriologist, Dairy Division. Washington: Government Printing Office 1912.

DIRECTIONS FOR THE HOME PASTEURIZATION OF MILK. By L. A. Rogers, Bacteriologist, Dairy Division. Copies of this publication may be procured from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 5 cents per copy.

VACCINATION. An Analysis of the Laws and Regulations Relating Thereto in Force in the United States. By J. W. Kerr, Assistant Surgeon General. Prepared by Direction of the Surgeon General. Washington: Government Printing Office. 1912.

THE NECESSITY FOR SAFE WATER SUPPLIES IN THE CONTROL OF TYPHOID FEVER. By Allan J. McLaughlin, Passed Assistant Surgeon, Public Health and Marine-Hospital Service. Washington: Government Printing Office. 1912.

HOOKWORM INFECTION IN FOREIGN COUNTRIES. The Rockefeller Sanitary Commission for the Eradication of Hookworm Disease. Published at the Offices of the Commission, Washington, D. C. 1911.

THE BACTERIOLOGICAL DIAGNOSIS OF COLERA. English Translation Submitted by H. D. Geddings. Surgeon, Public Health and Marine-Hospital Service. Washington: Government Printing Office.

News Items

For Rent.—Very desirable hours in a newly equipped suite, 1302 Columbus Memorial building, 31 North State street. Inquire of tenant.

Pistakee Beach Hotel.—This hotel at Fox Lake, Ill., will open this year on May 30th. It is also worth noting that it will remain open in the fall for the accommodation of sportsmen during the hunting season.

Removal Notices.—Dr. Frederick G. Harris has removed his office from 407 Schiller building to suite 925 Monroe building, 104 South Michigan avenue. Telephone, Randolph 5931.

Dr. Arthur R. Edwards has removed his office to suite 909, Monroe building, 104 South Michigan avenue. Hours, 1 to 3 p. m. Telephone, Randolph 5831.

Dr. Frank Edward Simpson has removed his office to 1604 Mallers building, corner Wabash avenue and Madison street. Hours, 10 a. m. to 1 p. m., 2 to 3:30 p. m. Telephone, Randolph 5794.

Dr. Thomas J. Watkins and Dr. Arthur H. Curtis announce the formation of a partnership and now occupy suite 909, Monroe building, corner Monroe street and Michigan avenue. Hours, 11 to 1. Telephone, Randolph 5831.

Dr. L. E. Schmidt is now located at suite 1616, the Mallers building, southeast corner Wabash avenue and Madison street.

Dr. H. H. Frothingham announces the removal of his residence to 4717 Kenwood avenue.

Dr. George Morganthau and Dr. Ira Frank announce their removal to suite 807-812 Monroe building, 104 South Michigan boulevard, corner of Monroe street. Hours, by appointment, from 11 a. m. to 5 p. m.

Dr. Max Reichmann announces the removal of his laboratory to suite 1606, Mallers building, southeast corner of Wabash avenue and Madison street. He also states that he has installed the latest apparatus for screen examinations of the viscera of the chest and abdomen. Hours, 9 to 12, 2 to 5. Telephone, Central 1155.

Dr. Geo. W. Hall, Dr. Frank E. Pierce, Dr. E. Fletcher Ingals, Dr. Joseph Z. Bergeron, Dr. James C. Gill, Dr. Elmer L. Kenyon, Dr. Daniel R. Brower, and Dr. Stanton A. Friedberg announce the removal of their offices to the Monroe building, 104 South Michigan boulevard.

Dr. E. C. Dudley has removed his office to the Peoples Gas building, suite 1443.

Dr. J. Holinger (Ear, Nose and Throat), announces the removal of his offices from 814 Schiller building to suite 1507 Kesner building, 5 North Wabash avenue. Hours 1 to 5 p. m. Residence Phone, Lincoln 557.

Opening of the Largest Amusement Park.—There is no better relief for the sedentary office man or woman than an occasional evening of rollicking fun—noise, music and laughter. The lake boats

and amusement plants of Chicago are as great public benefactors as the bathing beaches and public parks.

On May 15th Riverview Park will open under the management of Mr. James D. O'Neill.

"The management of Riverview Park has expended every effort to present a park without a peer to the people of Chicago on the opening day," Mr. O'Neill said. "No financial limitations have been considered in the refurnishing of the park for the coming season. The sum of money which has been spent will be shown in the artistic freshness of the whole park, and in the numerous spectacular surprises which have been installed.

"Riverview is one of the very few amusement parks in America that has maintained the atmosphere of nature. Wherever you go in Riverview you find great shade trees and acres of broad lawns. If it were for no other attraction, ignoring the myriad rides and spectacles, Riverview would be popular alone for the restful atmosphere created by the groves of leafy trees.

"With these hundreds of trees spread over an area of 140 acres, Riverview has an original asset that forms a magnificent background for an exposition of shows and rides."

New Building for Lakeside Hospital.—The management of the Lakeside Hospital, 4147 Lake avenue, Chicago, has arranged to put up a new building which will be of the most modern construction, and will accommodate 125 patients. There will be ample operating room facilities, laboratories, delivery rooms, hydro-therapeutic room, X-ray laboratory, and all other facilities for the care of medical and surgical cases that may be found in a strictly modern hospital.

The location will be central, on the South Side, and is being chosen with a view to accessibility, ample space and quiet.

The new Lakeside will be the largest and most modern private hospital in Chicago.

The record of the present Lakeside Hospital during the past ten years, both as a high class, ethical institution, and as a financial success, give ample warrant for future stability and successful operation of the institution, and speaks for a much greater field of usefulness to the doctor and the patient.

By far the larger portion of the money needed for the building of this beautiful new hospital has been arranged for by the present owners and a contract entered into for the building. A small issue of stock is being placed at par, a limited amount of which is still available. The management would be pleased to have Chicago physicians associate themselves with them in this new enterprise by the purchase of a few shares.

This is pre-eminently a doctor's hospital. No preferments shown; no staff; all men treated alike—and we consider the investment a sound one, viewed from a purely business standpoint.

St. Mary's Hill.—The School Sisters of St. Francis, who conduct the Sacred Heart Sanitarium, Milwaukee, Wis., announce the opening,

May 1, 1912, of a hospital, to be known as St. Mary's Hill, for the treatment of nervous, mental and drug cases.

The building is three stories high, 130 feet wide, and 150 feet deep. It is of reinforced concrete, brick and tile, fireproof construction; and is furnished with heat, light and power from the powerhouse of the Sacred Heart Sanitarium. It is situated on a hill in a five-acre park, one-third of a mile west of the sanitarium.

Dr. S. S. Stack, under whose management the Sacred Heart Sanitarium has more than quadrupled its business in the last twelve years, will also superintend, with the Sisters in charge, the conduct of "St. Mary's Hill." Dr. Stack has secured, as resident physician, the services of Dr. J. F. WenGlesky, formerly assistant and acting superintendent of the Kankakee Hospital for Insane. The nursing will be done principally by the Sisters.

There is a wide demand for a moderate-priced, high-class, psychopathic hospital, planned and equipped to give the skillful treatment necessary to restore the mental integrity of such cases, without the unjust stigma that follows a commitment to a state hospital for insane.

Ample accommodations are provided for amusement, exercise and recreation. On the attic floor are work rooms, a sun-parlor, and a large screened roof garden—all nearly two hundred feet above the level of Lake Michigan. This affords a beautiful view of the lake, the city, and surrounding country.

Eighty per cent of the accommodations range from \$18 to \$25 per week, including medical attention, hydrotherapy, medicines, and general nursing. Rates for rooms en suite and special nursing on application.

The Ransom Sanitarium is located on the east bank of Rock river, two and one-half miles north of the business section of Rockford, Ill. It is delightfully located, its immediate surroundings being ideal for the treatment of nervous diseases. It is prepared to care for nervous diseases, mild mental cases, drug and alcoholic habits. The facilities for treatment are unexcelled, the modern methods of hydro-therapy being used to a great extent. The hydro-therapeutic department has been overhauled and there has been instituted new shower baths, hot air and electric light baths, greatly improving the facilities.

The sanitarium has been purchased by Dr. Frank H. Jenks, who comes to the institution from the Elgin State Hospital, where he has been assistant superintendent for ten years. Dr. Jenks is well known throughout the northern part of the state as a physician and alienist.

Dr. W. L. Ransom, who was for a number of years associated with Dr. Penn W. Ransom, remains as house physician.

Chicago Medical Directory.—The new edition of the Chicago Medical Directory, so well known that it is familiarly called "The Blue Book," is to appear early in July. The 1912 edition will again contain the STREET list of physicians and druggists, as there has been a general demand that this be resumed. The Directory of Physicians has been enlarged and now includes Cook County.

These changes add much to the value of the directory and no physician can well afford to be without a copy. The subscription price

is \$2.50 with a discount of 50 cents where cash accompanies the order.

Remember this edition will contain a list of medical societies, together with their officers, a list of hospitals and sanitariums with their medical staffs, etc., a list of medical schools and colleges, an alphabetical list of physicians of Cook county, also an alphabetical list of druggists of Cook county, and the Medical Fee Bill, also the reincorporation of the Physicians' and Druggists' Street Directory.

Send orders to McDonough & Co., 154 West Randolph street, Bank floor, Chicago. Telephone Franklin 126.

Physiologic Therapeutics.—The majority of chronic diseases are the result of an unhygienic mode of living. While we are constituted so that an abundant supply of pure air is the first essential, the *conditio sine qua non*, for the preservation of health, we spend the greatest part of our life indoors, under conditions which hardly can be called hygienic. We eat when we ought not to, are careless in the selection of our food, disregard the importance of a thorough mastication and, as a rule, consume more food than is good for us. We are addicted to the use or rather abuse of all kinds of stimulants and indulge in excesses of various kinds. We either work more than our physical or mental energy can respond to, or we are idlers. We turn night into day and thus deprive ourselves of a healthy sleep.

That such continued violation of Nature's laws will sooner or later lead to all possible disturbances is a matter of course. And it also is a matter of course that if we want to remove these effects, i. e., if we want to cure the patient, we must first of all do away with all habits and conditions which played such an important part in the development of the patient's affliction. Medication alone will never do. If we want to cure and not only relieve, we have to apply to the *vis medicatrix naturæ* which we must strive to invigorate, and this can only be done by the application of physiologic therapeutics.

Open air treatment, diet, hydrotherapy, mechanotherapy and sun baths ought to take the first place in our Pharmacopoea. What the open air treatment does for tuberculosis it will do for other diseases.

It is a pity that physiologic therapeutics are not more extensively resorted to. There are not nearly enough institutions in this country in which they are scientifically applied. Near Chicago alone there would be room for twenty such institutions, to which the physician could send his patients, have his instructions as to diet, baths, exercise, rest sun-baths, etc., carried out and at the same time keep the patient under his care.

One of such institutions is that of Dr. Carl Strueh at McHenry, Ill., which can be reached by rail within one hour, or by automobile within three hours. Dr. Strueh has an office at the Reliance building.

Practical Hints from Kansas City.—The Hospital and Health Board of Kansas City is using what seems to be a very sensible means of educating the people as to purity of certain staples in food products. This is in one form the setting forth of bacterial counts. For example, ten dealers in milk, whose names are plainly given, have the record of ten thousand bacteria, as many more have twenty thousand,

seven in each group have thirty and forty thousand respectively, and similar numbers of firms have the different numbers up to one hundred thousand. Practically seventy-five firms have the showing of 100,000 or less and the names are plainly printed and also the round figures of the count. When one goes down the list in this monthly brochure, which is to be had for the asking, and finds that a dozen firms are above 400,000, fifteen others somewhere up to one million, ten between one and two million and three with more than two millions, the maximum being above six million, one can see how trade may readily be taken from the higher counts just as soon as the people realize what it all means. In ice cream the count here is all high, in the eight cases ranging from 690,000 to 3,790,000 bacteria per cubic centimeter.

In this city, which has given many signs of its progressive spirit, there is a public agitation with reference to the ventilation of the public schools. This is a matter far more serious, not only in school houses, but in steam-heated flats, than is generally realized. The open-air education has hardly yet reached the point of considering the moistening of air, for example, that which is distributed by heating systems or in the case of steam heat, made on the spot without consideration for the greater appetite of warmed air for moisture.

A recent issue of the monthly report gives some attention to the disposal of rubbish and garbage, a matter which in many large cities has lately been much before the public eye. With reference to the sorting of trash, the Kansas City authorities have this to say: "Persons picking over rubbish and trash are liable to infection from typhoid, diphtheria, scarlet fever, etc., and if any one of these persons develops a case of either of the diseases mentioned and dies, the city then becomes the executioner. Again we are informed that a human life has a financial value of about ten thousand dollars, and, if so, what economy would there be in this loss of life to the city?" The health authorities of this Western city note that with the destructor method garbage, street rubbish and dead animals can be destroyed in a healthy and a sanitary manner. The by-products are clinker and steam, the former of which has a commercial value for paving and concrete work, while the steam may be used in the generation of electricity for municipal consumption. These Westerners set forth as the necessary guiding principle that health and sanitation must be first and then it is time to consider the value of by-products.

THE CHICAGO MEDICAL RECORDER

JUNE, 1912.

Original Articles.

OBSERVATIONS ON THE DIAGNOSIS AND TREATMENT OF FRACTURES.*

By S. C. PLUMMER, M. D., CHICAGO, ILLINOIS

Our forefathers were expert in the handling of fractures. They studied carefully their mechanism, the anatomy of the structures involved, the influence of the muscles in causing and maintaining displacement of the fragments, their diagnosis and their treatment. The treatment of fractures constituted a large proportion of the surgeon's practice. His ability as a surgeon was largely judged by his success in their treatment. Many ingenious splints and many efficient apparatus were devised. The surgeon prided himself on his ability to apply a bandage not only skilfully, but neatly.

What of the present? The surgeon of today can perform many operations upon the cavities of the body which surpass our forefathers' dreams of accomplishment, but in the management of simple fractures of the long bones has he advanced beyond our forefathers? I would even put the question more forcibly: Is the average practitioner who handles fractures today the equal of the average practitioner of the generation which has gone? I am inclined to answer these questions in the negative.

If it be true that the improvement in the treatment of fractures has not kept pace with the general advance in surgical treatment, how is this to be accounted for?

We have the aid of asepsis and the X-ray, two valuable adjuncts unknown to our predecessors, but aside from the great improvement in

*The Address on Surgery, Iowa State Medical Society, Meeting at Burlington, May 8-10, 1912.

the results in compound fractures wrought by asepsis, these two aids have not been used to the full extent of their possibilities.

I account for this state of affairs by a comparative lack of interest in fractures on the part of teachers and students. Fractures have been treated for ages; most of the points in their diagnosis and the essential principles of treatment have long been settled. The consideration of fractures, then, lacks the attraction of novelty. The teacher has been pushing out into the new fields of abdominal, thoracic and cranial surgery, and the student has followed him. There is nothing spectacular in the ordinary treatment of fractures, and the student is likely to belittle the fracture clinic as compared with the operative clinic. Yet the majority of students will become general practitioners, and, as such, will be intrusted with the treatment of fractures more frequently than with abdominal operations.

A change in the attitude of surgeons toward the subject of fractures is at hand. As evidences of this I call your attention to the fact that the address of the president^o of the American Surgical Association for the year 1911 was upon this subject; one session of the Third International Congress of Surgery, held at Brussels in 1911, was devoted to fractures; a large proportion of the clinical teaching of the president of the American Medical Association is devoted to fractures; papers on fractures are being published from the large clinics both in this country and in Europe.

I make a plea, then, for your renewed interest in the subject of fractures.

DIAGNOSIS.

In the matter of diagnosis, the X-ray has been the most valuable acquisition of recent years. Before its introduction the nearest approach to an accurate diagnosis was afforded by examination under a general anesthetic. This is a method that is by no means to be dispensed with, but in many cases the use of the X-ray makes resort to anesthesia unnecessary, and also gives more accurate information. In cases where the swelling is great or the limb very fat or muscular, an accurate diagnosis is often impossible, even with general anesthesia.

The X-ray has taught us that fractures are much more frequently comminuted than we formerly believed, and in many cases a manipulative examination reveals only the main line of fracture. Fractures of certain bones, such as those of the carpus or tarsus, formerly thought to be curiosities, are now known to be of rather frequent occurrence. Many impacted fractures and linear fractures without separation of the fragments are now discovered. These frac-

tures may lack most of the diagnostic signs by which we ordinarily recognize fracture, such as deformity, crepitus and a false point of motion, but one sign is almost invariably present, and that is a localized point of extreme tenderness to pressure upon the bone at the site of fracture. Where this sign is elicited it is strong presumptive evidence of the existence of a fracture.

It takes but a limited experience in the study of skiagrams to teach the observer that these are frequently deceptive. One must never forget that the skiagram shows a shadow of the bone, not a photograph of it; and it is a matter of common knowledge that a shadow is often very unlike the object which casts it. The distance of the bone from the plate and the position of the tube in relation to the fracture must be taken into account. Often an exposure taken from one aspect of a limb may fail to show a fracture, or show one with a minimum of displacement, while a second exposure at right angles to the first may show a fracture with great displacement. It is, consequently, an imperative rule to have two skiagrams of each fracture, these being, as nearly as may be, at right angles to each other.

Wherever possible, the opinion of an expert skiagrapher should be obtained as to the interpretation of the skiagram.

The X-ray has not fulfilled its usefulness when it has assisted us in diagnosis, but is invaluable as a test of the efficiency of our efforts at reduction and retention. Sometimes satisfactory reduction is impossible by the non-operative method; and sometimes, when reduction is satisfactory, retention in good apposition is impossible. The X-ray will reveal this and should be used after the retentive dressing has been applied in all cases where practicable.

The employment of the X-ray, as just outlined, is desirable in every case, and, where practicable, should invariably be resorted to. We, of course, admit that the exigencies of many cases make it impossible to attain this ideal.

TREATMENT.

In the treatment of fractures we aim first to secure a good functional result and, second, to get a restoration of the parts as nearly to the anatomical as possible. As a rule, the nearer the exact anatomical reposition we obtain, the better the functional result. The X-ray taught us, better than anything that had preceded it, how far short we fall of obtaining the best results, and, as a consequence, a revival of interest in the treatment of fractures was inevitable.

To Mr. W. Arbuthnot Lane we owe much for taking advanced ground in the treatment of fractures by the open method. Lane not

only improved the technic so as to lessen the danger of sepsis in open operations, but also improved the methods of fixation so as to make good results more certain.

As the most notable advances in the management of fractures during the last decade have to do with the open treatment, this paper will deal largely with this phase of the subject. I beg of you, however, not to put me down as an advocate of the open treatment as a routine, for I believe this treatment should be reserved for the cases where good functional results cannot otherwise be obtained. I believe that in the hands of the average surgeon the open treatment is not without danger, however it may be in the hands of specially trained and greatly experienced operators, such as Lane and Lambotte. The tone of the recent articles by American surgeons, while advocating the open treatment in certain cases, is distinctly conservative.

First, let us consider briefly some recent improvements in the non-operative method of treatment.

EXTENSION.

Extension by means of the weight and pulley attached to the limb by adhesive plaster has for many years been of universal application where extension was to be employed in connection with retentive dressings, and is, in the main, efficient. Aside from this, certain rather complicated splints adaptable to certain fractures were the only means of extension used. In some cases the adhesive plaster could not be applied, owing to a condition of the skin which made it intolerable, to complicating wounds or to the location of the fracture so near the end of the limb that there was not surface enough below the fracture to make the plaster secure. In such cases Codivilla, of Bologna, recommended "nail extension," and this has been used and advocated by Steinmann, of Berne, and Anschutz,¹ of Kiel. "By this method the weight is attached directly to the distal fragment by means of a nail which is driven through the bone." (Anschutz.) By means of cords attached to the ends of the nail the weight is allowed to hang over a pulley. "One may drive a nail into the bone on either side, or drive one nail entirely through the bone and soft parts."

Anschutz says that the method is not painful, and while he admits some danger of infection, he says that this is slight, and, in order to minimize it, does not employ the nail until the direct results of traumatism have subsided. He also mentions the possibility of interference with the function of a joint by the nail's proximity to it.

As an aid to the reduction of fractures without open operation,

more efficient means of extension have been devised in recent years. Manual extension is often insufficient; moreover, it cannot be steadily maintained, owing to fatigue on the part of the assistant making the extension.

When Professor Lorenz visited this country a few years ago and demonstrated his method of reducing congenital dislocation of the hip, he had his assistant apply a skein of yarn to the patient's limb, by means of which extension was made. This was more efficient than gripping the limb with the hands, but left much to be desired. A layman from Boston, a lawyer named Bartlett, invented an extension apparatus to facilitate this reduction. This apparatus consists essentially of a steel rod, one end of which works in a socket fastened upon the end of the operating table, the other end carrying a foot-piece which is attached to the foot by means of a leather strap. Extension is made by a ratchet by means of which the foot-piece may be moved upon the rod. Modifications of this apparatus have been used by orthopedic surgeons in the adjustment of fractures of the femur, as a plaster cast can be applied from the ankle up to the waist while the traction is being exerted. This apparatus is also useful in the open treatment of fracture of the neck of the femur, which will be alluded to later.

The use of the weight and pulley is also helpful in the reduction of fractures without operation, as well as where the open method is used. Much greater weight is used than in the ordinary extension dressing, Martin¹³ having used even two hundred pounds in fracture of the femur. In non-operative cases the extension may be applied to the limb by a strong canvas strip tied in a clove-hitch. In the case of the femur the clove-hitch is applied just above the tuberosities, care being taken not to have the pull come upon the popliteal space for fear of injurious pressure on the vessels and nerves. In case of the humerus, the canvas band is applied around the forearm close to the elbow, without a knot, the forearm being held by a narrow sling at right angles to the arm. Magnusson¹¹ has devised a convenient apparatus for applying extension in this manner.

Gibbon⁶ advises the continuous use of extension by means of adhesive strips and the weight and pulley as a means of reducing obstinate cases of fracture of the humerus or bones of the forearm. This continuous traction may be kept up for a period of from two to ten days.

Sometimes owing to great swelling and to blisters and abrasions, a simple fracture cannot be properly reduced and dressed for some

days after the injury. During this time the fragments may have become so fixed that they are with difficulty released from the faulty position they have assumed. In such cases a piece of hard wood in the shape of a triangular prism, one of its angles being padded and covered with leather, may with advantage be used as a fulcrum over which the fragments are powerfully manipulated by the hands of the surgeon, until thoroughly loosened. These wooden blocks are frequently used in orthopedic clinics.

I wish in passing to mention two fractures whose treatment has been improved in recent years without open operation.

NON-OPERATIVE TREATMENT OF FRACTURE OF THE NECK OF FEMUR.

The first is fracture of the neck of the femur. As you all know, for many years there was violent discussion in the profession as to whether bony union could take place in an intracapsular fracture. Non-union or fibrous union so frequently resulted in these cases that the prognosis was unsatisfactory in the extreme.

It is to the honor of the profession of the state of Iowa that a practitioner of this state, a member of your society, the late Dr. T. J. Maxwell, of Keokuk, devised a treatment for this fracture which gives satisfactory results in a large proportion of cases. During Dr. Maxwell's life this method of treatment failed to gain the recognition which it deserved, but, thanks to the energy of Dr. Ruth in promulgating it, it is now favorably known and extensively used by many surgeons of large experience.

Whitman's¹⁵ method of fixing the limb in abduction by a plaster bandage is said to give good results in suitable cases. As part of the fixation of the fragments in the method of treatment is brought about by the application of the great trochanter to the side of the pelvis, this method is not applicable to cases complicated by a fracture through the trochanter.

FRACTURES THROUGH THE ARCH OF THE FOOT.

Another fracture in which improved treatment has been applied in recent years is that involving the arch of the foot, passing either through the tarsus or metatarsus. Great functional disability results in these cases if a condition of flat-foot is allowed to ensue, and this is inevitable in fractures with much displacement, unless much care is used in adjusting the fragments so as to restore the normal arch. In these cases it is well to wait for the subsidence of the swelling, then to thoroughly loosen up the fragments in the manner mentioned above, this, of course, necessitating general anesthesia; after which

the fragments are pushed into normal position and the foot fixed in a plaster-of-paris dressing in the position of supination, that is, the foot is in a position of over-correction opposite to the position of flat-foot. Although the foot may appear slightly deformed, it will give somewhat when the patient walks and approximate a normal position. Even if a slight degree of varus persists, the patient is much better off than he would be with flat-foot, as he will not suffer the pain and early fatigue so common with the latter condition.

OPEN TREATMENT.

The open treatment of fractures is much more common of recent years than formerly, and furnishes an alluring field for surgical endeavor. We must bear in mind, however, that the open treatment involves a surgical operation, which is never without its dangers, and an operation is never to be resorted to when an equally good functional result can be secured without it.

The advantages of the operative treatment of simple fractures are stated by Mr. Lane⁹ as follows:

“(a) It at once relieves the patient from the pain of any movement of the fragments upon one another.

“(b) It frees him from the tension and discomfort due to the extensive extravasation of blood between and into the tissues.

“(c) It shortens the duration of the period during which he is incapacitated from work, since union is practically by first intention, and, consequently, very rapid and perfect.

“(d) Lastly, and by far the most important, they leave his skeletal mechanics in the condition in which they were before he sustained the injury.”

I cannot agree with Mr. Lane in all of these contentions.

As to the relief of pain, this is not peculiar to the operative method, as we have all seen relief as soon as an adequate fixation dressing was applied.

As to the rapidity of union, Hessert⁷ says: “It has been my experience to see union delayed weeks, even months, and I have never had a case of infection.” I have heard Murphy express the opinion that union was slower when a Lane plate had been applied, and this has also been my experience in some of my cases.

The greatest advantage, and one that cannot be disputed, is the last one, mentioned by Lane, namely, that of restoring the bone to its normal anatomical form.

INDICATIONS FOR OPEN TREATMENT.

As to the indications for the open operation, there is a wide range of opinion.

Lane⁹ says: "I make it my habit to operate on all cases of simple fracture of the long bones in which I am unable to restore the fragments to their normal relationship, and in which it is important to the individual that his mechanics should not be impaired by the injury."

In another place¹⁰ he states it a little differently: "I operate on all simple fractures in which I am unable to bring the fragments into satisfactory apposition, when the circumstances of the patient require it."

This leaves us somewhat at sea as to just what cases Lane operates upon, as it is a matter of individual judgment as to what constitutes satisfactory apposition. If by "normal relationship of the fragments," he means perfect anatomical restoration, he must operate upon practically every case of simple fracture. However, as we know that many cases of apposition give satisfactory results, even though the apposition is not anatomically perfect, it is safe to say that Lane treats many cases without open operation. Certainly, his statements above do not justify the assumption, frequently heard, that he operates on every case of simple fracture.

American surgeons are much more conservative and reserve the open operation for those cases in which reduction, accurate enough to insure a good functional result, either cannot be obtained, or, having been obtained, cannot be maintained by dressings.

In doubtful cases reduction should be made under anesthesia, retentive dressings applied and a skiagram taken. If, then, the apposition is not accurate enough to insure a good functional result, the open operation should be resorted to, if all conditions for operation are satisfactory.

IMPORTANCE OF STRICT ASEPSIS.

On one point there is absolute unanimity of opinion of all operators and writers, and that is upon the importance of the strictest asepsis. No simple fracture should be converted into an open fracture unless all the conditions are perfect for carrying out a perfect aseptic technic. All are agreed that in this class of bone surgery more than in any other type of operation, asepsis is necessary for success. The peritoneum, we know, can overcome the effect of a certain amount of septic contamination; not so with the bone. While some observations have been made that a slight degree of sepsis seemed to hasten union,

all agree that the one chief and overwhelming cause of failure in these operations is sepsis.

Mr. Lane has evolved a special technic for operating aseptically in these cases. Special long and powerful instruments have been devised, the skin of the patient is covered up to the wound margins, and the operation is completed without introducing the fingers into the wound. To operate thus requires special skill, but those of us who are not expert enough to carry out Lane's technic in full in all cases should aim to approach it as nearly as possible.

FIXATION IN COMPOUND FRACTURES.

American surgeons are inclined to employ the Lane plate, or other device, for fixing the fragments, in compound fractures. Perfect asepsis can, of course, not always be obtained in these cases, and it will frequently be necessary later to remove any foreign body which has been introduced. In spite of this the ultimate result will often be better than when the fragments are not treated by direct fixation, and aseptic results are frequently obtained, even in these cases.

TIME FOR OPERATION.

As to the length of time after the receipt of the injury to wait before operating, there is a difference of opinion, some advocating immediate operation and others preferring to wait until the immediate effects of the trauma have subsided. I believe it safer to wait from seven to ten days, since the tissues are certainly better able to resist sepsis when the circulation has been somewhat restored, and asepsis is the all-important requisite for success.

INCISION.

In performing the open operation the incision is so placed as to reach the bone where it is most accessible, splitting the muscles instead of dividing them, as far as this is possible, and saving the important vessels and nerves.

EXTENSION IN OPEN OPERATION.

In effecting reduction and assisting in holding the fragments in apposition while fixation is accomplished, some of the methods of extension mentioned above in connection with reduction of cases treated without open operation will be found of great value.

Martin¹⁸ uses a sterile strip of strong canvas, a loop of which is passed over the upper end of the lower fragment, the free ends of the canvas strip being fastened to a rope which passes over a pulley. Weights of from fifty even up to two hundred pounds are used for from three to ten minutes.

Bartlett³, of St. Louis, uses "a lace-shoe large enough to permit of free dorsal padding, after a screw-eye has been driven through the mid-line just in front of the heel and anchored to a thin steel plate similar to an insole."

REDUCTION IN OPEN OPERATION.

Bringing the freed ends of the fragments out of the wound at an angle to each other often facilitates reduction. Blake⁴ uses Lambotte's clamps to hold the fragments and bring them out of the wound, and says that, by so doing, he no longer has to use traction for reduction.

In making the reduction one can frequently find certain projections on one fragment which fit into indentations on the other fragment. Sometimes these will hold so accurately that after reduction no special fixation is necessary. If corresponding parts are thus fitted, we are assured that there is no abnormal rotation in the shaft of the bone. This rotation of the fragments is of great importance in fractures of the forearm, and is in some cases most difficult to overcome without an operation, and failure to overcome it may result in great disability from limitation of pronation and supination. Ability to correct abnormal rotation is one of the advantages of the open operation.

FIXATION.

For fixation there may be used wire, nails, pegs, screws, or plates. The classical silver wire suture, so much used until recent years, has now been largely superseded by the other appliances mentioned, and Lambotte says it should disappear from practice. In a number of cases where union has failed after the use of wire, it has been obtained by the use of the Lane plate.

In some fractures the use of chromic catgut or of kangaroo tendon is sufficient. This is especially applicable to fracture of the patella, where good results are obtained if the rents in the capsular ligament and aponeurosis at the side of the fractured bone are repaired and the torn periosteal-aponeurotic tissues on the surface of the bone are united.

Metal is mostly used for nails, pegs and screws, but ivory is also sometimes employed. Steel seems to be the best material for plates. The screws used to hold the plates should be threaded up close to the head, in order to give them sufficient hold in the bone, and, as a rule, are expected to reach only through the compact tissue of the surface of the bone next to the plate.

A hole must be drilled large enough to permit of driving in the screw with a screw-driver, but not so large that the screw will not take a firm hold. Before this is done the plate must be held firmly in contact with the bone in the place it is expected to remain. Lambotte fastens one end of the plate to one fragment before making reduction; then brings the other fragment into place and fastens the other end of the plate to it. Most operators, however, apply the plate after the fragments have been reduced. Special clamps must be used to hold the plate and the fragments steady while the screws are put in. Several of these clamps have been devised, the most recent one by Bartlett.²

The question as to whether to apply the plate immediately to the bone or outside the periosteum is still unsettled and, as far as I know, does not affect the result. It is intended that the plate shall remain permanently, but if sepsis ensues, its removal is generally necessary. Sometimes a plate has to be removed even months after its application, even when the wound has apparently healed aseptically. In these cases it will generally be discovered that a slight sepsis is present. Lane, with his splendid technic, seldom finds it necessary to remove a plate; many other operators find it necessary to remove a large proportion of the plates.

In fractures of the neck of the humerus high up where the fragments cannot be properly adjusted, or in ununited fractures of the neck of the femur, nails or screws should be used. In order to prevent rotation of the upper fragment, two nails, or screws, should be employed in each case.

In the case of the femoral neck, if the extension apparatus, which the orthopedists use in reducing congenital dislocations of the hip, is employed, the great trochanter may be exposed by incision and the screws, or nails, inserted. Murphy exposes the femoral neck by temporary resection of the upper part of the great trochanter, so that the reduction can be observed and the nails properly placed.

Murphy¹⁴ has replaced a head of the humerus, which had been entirely detached, and even removed and laid on the table, fixed it in position by nails and has proved by the skiagram that the head had fully regenerated.

UNUNITED FRACTURES.

Open operation is indicated in ununited fractures, and in these cases the plates will be found superior to the older method of wiring.

Murphy¹⁴ says the best treatment of ununited fracture, which the X-ray shows no osteogenetic effort to span the gap with new bone, is

the transplantation of the crest of the tibia from the same patient into the medulla, so as to span across the line of fracture.

CLOSURE OF WOUND.

The wound is closed without drainage, as drainage leaves an avenue for infection, the complication to be avoided above all others.

The best retentive dressing, as a rule, is plaster-of-paris, applied either as a cast or in the form of moulded splints. If the wound heals aseptically, there will be no need of changing the dressing for several weeks. If there are signs of infection, the dressing must be changed. If a cast has been applied, a window may be cut in it over the wound, through which the dressing may be changed.

MASSAGE.

I am a strong advocate of early massage in fractures. If moulded or other splints are used, one splint may be removed very early and enough of the limb laid bare to permit of some massage, while the other splint remains in place. If a cast is used, this should be temporarily removed, as soon as there is enough union to hold the fragments in place, and massage cautiously administered.

Massage is also of benefit before operation, in the interval between the receipt of the injury and the time of operation.

CONCLUSIONS.

In conclusion, I would emphasize that there is no controversy at the present time as to whether operative or non-operative treatment should be the rule of practice in the handling of fractures.

Rather, each case should be considered on its individual merits.

Fractures should receive more careful consideration than in the immediate past.

Non-operative measures should be exhausted before resorting to open operation.

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TEMPERANCE VERSUS THE ARMY CANTEEN.

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It is generally conceded in military circles that everyone who accepts a commission in the army or enlists as a soldier, relinquishes to a certain extent his civil rights as a citizen. The oath of office or enlistment imposes the obligation of blind obedience to all lawful orders and commands from superiors, notwithstanding the fact that it may deprive both officer and soldier of his personal liberty.

No military service can be efficient unless the strictest military discipline and good order prevail. As a compensation for submission to military order and command, the government provides ample pay and allowances, and obligates itself to pension both officer and soldier on age or length of service, as well as for physical and mental disabilities contracted in the line of duty.

In view of the liberal retired pay and pension for physical disability or length of service, as a matter of investment, the government has the right to demand that everyone be required to safeguard his health against diseases and vicious habits. Sanitary orders were issued to the men in the Philippines against cholera, malaria, unboiled water, venereal diseases, etc., and there is no good reason why both officers and men should not be forbidden the use of alcoholics, which promotes a greater degree of inefficiency and poor health than the other factors previously mentioned.

Few, if any observing laymen, can doubt the deleterious influences of alcohol on the human economy, when habitually used even in small quantities, and it was for this reason that Congress abolished the canteen in 1901.

Much has been said and written in favor of the restoration of the canteen by its advocates during the past year, and it would seem only fair to present the other side of the question, especially as a bill has been introduced in Congress to restore it.

I have carefully read the numerous articles advanced by the friends of the canteen and have seen in them nothing convincing. With few exceptions they were written by individuals unacquainted with army life, or by former officers not in touch with the army of today. The canteen question is a dead issue in the army and its agitation is only kept alive by self-imposed champions from civil life who really know little or nothing of the true circumstances. In making an appeal to Congress for the restoration of the canteen, its champions

contend that the following conditions have arisen in the army as the result of its abolishment in 1901:

- a. Increase in general sickness.
- b. Increased non-efficiency of the soldier.
- c. Increase in diseases of vice.
- d. Increase in alcoholism.
- e. Increase in desertions.
- f. Establishment of saloons and brothels around the post.

Should a single one of these conditions be true its champions would then have some ground upon which to base their petition. From an experience of nearly forty years in the army, and a most careful study of its vital statistics and conditions, I can refute the truthfulness of every charge.

In order to obtain an intelligent and impartial understanding of the subject, it is necessary to study the vital statistics and conditions of the army during the canteen and prohibitive periods. To this end I have selected two periods of ten years each. The one period embraces the years from 1889 to 1898, the canteen period, the other from 1901 to 1910, the prohibitive period.

a. The average admission rate of sick in the army during the canteen period was 1,246 per 1,000 men, while the average admission rate during the prohibitive period was 1,208. "Average admission rate" means the total number of separate admissions to sick report per 1,000 men per year. These figures show that more sickness occurred during the canteen period than during the prohibitive period.

This seems almost incredible when we remember that during the canteen period the army was stationed at home, in excellent quarters, with fine sanitary arrangements, good food and water, light duty and healthy climatic conditions. Besides, the army was small at that time and composed of middle aged men, who were well seasoned and disciplined.

On the other hand, the largest part of the army during the prohibitive period was almost constantly on duty in Cuba, Porto Rico, Hawaii and the Philippines, youthful in character, poorly selected, non-seasoned, unacclimated, subjected to poor sanitary conditions, an enervating climate and serious tropical diseases.

Fortunately the majority of our troops serving in the tropics were quartered in small pueblos and barrios, where no form of alcoholic beverages were available, and it is due, in my opinion, to this cause alone, that the sick rate was not doubled during that period. It is

true that native drinks were sold in the pueblos, but comparatively few of the men used them.

b. The non-efficiency rate of the army during the canteen period averaged 39 men per 1,000, while the non-efficiency rate during the prohibitive period averaged 49 per 1,000. The non-efficiency rate means the number of men in every 1,000 constantly on sick report. The figures show that the non-efficiency rate was slightly greater during the prohibitive period than during the canteen period. The explanation of this increase is clear and simple, and depends upon the character of the sickness during the two periods.

During the canteen period the army was stationed in the United States and hence the diseases were mild and fugitive in character, while during the prohibitive period the army was in the tropics contending against serious and persistent diseases lasting, in many instances, months before entire convalescence.

Thousands of the men while there contracted malarial diseases, amoebic dysentery, sprue, tropical anaemia, digestive and intestinal troubles, necessitating transfer to the United States before convalescence. It was due to this condition alone that the non-efficiency rate was greater during the prohibitive period than during the canteen period.

c. Diseases of vice during the canteen period were 80 per 1,000, while the rate during the prohibitive period was 147 per 1,000. The advocates of the canteen point with considerable satisfaction to the figures of this period, not knowing that the increase in the statistics of these diseases resulted from several causes non-existent from 1889 to 1898, and in no wise connected with the canteen question.

Physical inspections of the army for the detection of diseases of vice were never made before the outbreak of the Spanish War in 1898, and probably would not have been ordered then had it not been for their prevalence and disabling effects on troops en route to tropical stations.

Besides, the personnel of the army during the two periods was entirely different in character. Many of the men in service during the canteen period were middle aged and long since passed the turbulent period of life, when the baser passions rule, while the army, during the prohibitive period was composed of young men, the majority of whom were under twenty-five years. No one understanding human nature would expect mature men to be influenced by the same temptations that dominate passionate youth.

d. The alcoholic rate during the canteen period was 36 per

1,000, while the rate from 1901 to 1910 was 26 per 1,000, a clear gain of 28 per cent in the reduction of alcoholism during the prohibitive period. The army contained 30,000 men during the canteen period and 80,000 during the prohibitive period.

Had the army been as large from 1889 to 1898 as it was from 1901 to 1910, 8,800 more cases of alcoholism would have occurred during the canteen period than during the prohibitive period. These figures will no doubt prove a great surprise to the advocates of the canteen who have been making contrary statements.

The sale of whisky was revoked in the army in 1881 because of general drunkenness. The sale of beer was revoked in 1901 on account of intemperance. Temperance in the army has vastly improved since 1901, and I would like someone to tell me why the government should again revert to the bar-room business. We might just as well return to the old ration of grog, which was abolished over fifty years ago.

Practically every physician will tell you that drinking, even in moderate quantities, is harmful to the human organism, and I challenge anyone who understands human weakness to deny that the soldier's canteen is an agent for cultivating the drinking habit. The canteen becomes the kindergarten for the young recruit and the training school for the alcoholic habit.

With a bar-room in the exchange, hundreds of young abstemious soldiers would be compelled to drink, for they could not defend themselves against the importunities of their drinking non-commissioned officers and comrades, any more than the abstemious young lieutenant could against the drinking officers of his post twenty years ago.

Many of the young soldiers say that they cannot afford to be club men, and asked protection against the daily temptation to drink. They fully realize that the habit is easily contracted and that drinking unfits them for positions in civil life and militates against their future careers.

The great monthly increase of money deposited by the soldiers since its abolishment presents a strong argument against the canteen. At one of the posts where I was serving the monthly deposits with the paymaster, and money sent home, was three times as great as during the canteen period.

As a result of intemperate habits I have seen the health and lives of hundreds of army men wrecked, among whom were a number of splendid young fellows, who had never tasted alcoholic drinks before entering the service. Any form of alcoholic drinks lessens self-restraint, benumbs the higher sensibilities and makes men more reck-

less. A few drinks in the canteen, a few more in the nearby saloons on the outside, then the young soldier migrates to the red light district.

Only a few days ago I received a letter from an officer, who said: "The soldiers who did not patronize the canteen were called down at the table, when they attempted to eat any of the delicacies that were purchased from the company funds resulting from dividends on sales of beer. I have known this to happen at many posts."

e. From an examination of the annual desertions from the army during the past forty years, statistics prove that they have never been less than during the past few years. In fact the record for 1911 was the lowest during the past ninety years.

f. It is my opinion that the sale of beer in army posts has little or no influence on the establishment of such dens of iniquity. During and after pay day many of the drinking soldiers used to patronize civilian saloons, in spite of the canteen, because they could enjoy a greater variety of life and excitement. They would even sell their canteen credit in order to go downtown to cruise among the slums and red light districts.

In summing up the evidence on the six above mentioned charges, I find:

a. No increase in sick rate of admissions during the prohibitive period; on the other hand, the sick rate was greater during the canteen period.

b. The increase of the non-efficiency rate during the prohibitive period was due to the serious character of tropical diseases and conditions, and not to the absence of the canteen.

c. The increase of vice disease statistics during the prohibitive period, resulted from physical inspections held since 1901, the greater attention drawn to this class of diseases, and possibly in part to the difference in ages of the men composing the two armies.

d. The alcohol rate was less during the prohibitive period than during the canteen period.

e. There have been fewer desertions in the army during the last year than for the past ninety years, 1898 excepted.

f. The history of garrison life proves that the establishment of saloons and brothels around army posts are not influenced by the absence or presence of the canteen. A careful study of the above facts induced the late General Grant and many other experienced army officers to change their views on the canteen question.

Finally, in dismissing further argument on the abolishment of

the canteen as a factor in the health of the enlisted man, the Surgeon General states, "This office entirely concurs in the statement that the statistics do not show that the absence of beer from the canteen has increased the admissions to sick report, or the rates of constantly sick."

I have given nearly thirty-eight years of my life to the service of my country in the Medical Corps of the Army and have had an abundant opportunity to study the soldier in every phase. The professional side of my life has brought me into the most intimate contact with the soldier, both of the old and the new army.

During the seventies and eighties, with an army of civil war veterans, 70 to 80 per cent of whom were of foreign birth, drunkenness was common and condoned by the officers, many of whom were also intemperate. Conditions were widely different in those days with the army scattered over the vast western frontiers, which extended from Canada on the north to the land of the Aztec on the south, and from the Missouri river on the east to the sands of the golden Pacific on the west.

Those of us who spent the best years of our lives on isolated Indian reservations and the fringe of western civilization, recall oft and again in our dreams those dreary years on the plains while waiting and praying for a station in the east. With wretched quarters and surroundings, low standards of temperance and no place for social pleasure or amusement, is it strange that both officers and men were driven to the allurements of the fatal cup?

It was indeed a survival of the fittest during those unhappy days, but nature, through her inexorable laws, exacted her full toll and strewed the pathway of our western frontier with the flower of chivalrous manhood.

This was as true with the founders of the early frontier towns as with the army, and could the hundreds of thousands of those unfortunates who occupy the cemeteries of our western posts and settlements through drink, but speak, a wail of protest would ascend to Heaven that could be heard from the Atlantic to the Pacific, and drown for all time the misguided voices of the advocates of intoxicants in any form.

The tragedies connected with the deaths of many of these unfortunate men will never be known until disclosed before the final bar of the Great Jehovah. Thousands were killed in drunken brawls, or at the gaming table, while as many more wandered out into the blinding swirl of a merciless blizzard and found their winding sheets in the enduring snows of the northwest winter.

We are living in a different age today, with an entirely different army. The final taps have sounded over the majority of those drinking veterans of 1861-65, and a new class of men has sprung to the colors, a new army made up of American youth and, with few exceptions, under twenty-five years of age.

Visit any of our army posts and examine the faces of the men as they pass in review, and you will have little difficulty in discovering from their fresh complexions and elastic step that the majority have come from the rural districts.

The army does not consist of drunkards and venereal debauchees, as the advocates of the canteen have led the public to believe; the men themselves resent this unjust imputation, for many of them had never tasted liquor before entering the service, and were not acquainted with the saloon feature of life or the dens of vice.

The great percentage of our present army serve but one enlistment and should understand that drinking men rarely find employment in many of the fields of labor. Few railroads, banks or street car systems will employ drinking men, while preference is often shown to abstainers in many other walks of life.

We are living in a progressive and sane age, and there is no place in this busy world for the tippler or bar-room habitue. Even the so-called first class bar-room gives no employment to the drinking man.

Our young soldiers should be taught that any form of alcoholic drink saps at the vital functions of life and, if continued, leads to a broken down constitution and a shortened life. They should know that the most reliable statistics prove that the moderate drinker loses thirteen years of his life, the heavy drinker twenty-nine years and the confirmed drunkard thirty-four years.

Statistics prove that the prospect of life for the total abstainer at 20 years of age is 64 years, the moderate drinker 51 years, the heavy drinker 35 years and the confirmed drunkard 30 years. With such an array of facts, I marvel how any man of intelligence can advise the use of intoxicants in any form.

The educators of the country inveigh against the use of alcoholic drinks during the growing and formative periods, as they stunt both mental and physical growth. Laws have been passed in many counties forbidding the sale of such drinks within one mile of the school house.

Many municipalities forbid the establishment of saloons within six blocks of the school, desiring to remove temptation from the path of the school children. The majority of our soldiers are young men,

under twenty-five years, and still within the growing and formative period of life.

I have watched the effects of alcohol on the mental and physical condition of our officers and men for more than a generation and have failed to see a single one it has benefited. On the other hand, I have observed its baleful effects on thousands of our soldiers, and have seen hundreds of army officers cut down in the prime of life, disgraced or ruined in health through the drinking habit.

The medical profession knows that alcohol, even in moderate doses, always proves injurious to the human organism. Besides the marked organic changes which occur in the liver, kidneys, stomach, brain and arterial systems from its constant use, it affects mental acumen, and usually unfits its victims for the strenuous duties of life. Were its results self-limiting, the tragedy would not be so pitiful, but they are transmitted to the third and fourth generation of innocent offspring.

It seems strange indeed that the medical profession almost completely ignores the temperance question, which is the most important human problem of the age. A great hue and cry is raised against the use of adulterated food, such as preserves made of harmless carrots and labeled orange marmalade, while nothing is said about the general use of gin, brandy, whisky and other alcoholic beverages, which are a thousand times more injurious than adulterated food in its most malign form.

It seems high time for this great altruistic profession to assert itself on the nation's most vital question or go out of the health business altogether. The educated and thinking world should have as little respect for the physician who does not advocate temperance as for the minister of the gospel who does not preach the principles of the greatest teacher of men, the living Christ of today.

In spite of the inertia of the medical profession, the march of temperance has made more progress during the last twenty years than ever before in the history of its movement. Hundreds of thousands of the most intelligent young men of the country have enrolled themselves among the total abstainers, after a careful study of alcohol and its degenerating effects both mentally and physically.

On one occasion at the University Club of Chicago, during which I was present, where 550 business and professional men lunched, but twelve alcoholic drinks were served. Many other clubs in that great progressive city are cutting out alcoholic beverages at the same rate. The alert and wise man finds even that moderate drinkers are unable to cope with the total abstainer, who excels his drinking colleague in

every walk of life. They also find no necessity, benefit or wisdom in the use of even the lightest drinks, and that they are followed by no mental or physical improvement.

The intelligent man has also learned that the Great Creator has thrown about his system a cordon of sentinels to guard against disease, the white corpuscles of the blood, which perish under alcohol and leave him defenseless against the attacks of invading, malignant germs.

The post exchange, as a soldier's club, is a failure today, because the government is not getting the cooperation of those in charge. Make it an attractive place for the men and divest it of its commercial spirit and every argument for the restoration of beer will vanish.

If army officers would only take more interest in the moral welfare of the young soldier, their condition would be vastly improved. Many of them are not aware that the parents of these young men have imposed upon them a most sacred duty, and expect their sons to be returned to their fireside with as high standards of life as when they left the parental roof.

Let the government sanction the organization of an Army Temperance League at every army post and the advocates of the canteen would be surprised to see the number of enlisted men who would array themselves with the temperance party. The government should not only sanction such an organization, but provide suitable heated and lighted halls and additional pay for faithful membership. The soldier is given additional pay for skill in marksmanship because it promotes his efficiency, and why not for total abstinence, the greatest factor of them all?

Ask Kuropatkin why Russia lost out in her recent struggle with the tea-drinking sons of Dai-Nippon, and he will tell you it was because of vodki. Ask Lord Roberts, England's greatest soldier, and even Emperor William, the mailed hand of Germany, and they will both tell you that the greatest success in war is achieved with non-drinking men.

The advocates of the canteen insist that beer is essential to the happiness and well being of the soldier. I grant that the man who requires light beer makes a fair garrison soldier, but what is he to do when he is ordered to the field where it is out of the question? Many of such habitues would miss their daily stimulant, become homesick, discontented, worse than useless, and fill the hospitals to overflowing.

The canteen is of no advantage to the individual soldier or the government at large, because directly or indirectly alcohol has always been the principal cause of ill health and non-efficiency among the

drinking soldiers, and the determining factor of their misfortunes in life.

It is well known among military men that most of the crimes committed in the army can be traced directly or indirectly to the effects of alcohol. All the murders, suicides, robberies, court martial and dismissal of officers, prison and guard house sentences of the enlisted men, fights, brawls and wretchedness in the military service are practically confined to the drinking element.

Much more are its far reaching effects in civil life, where it strikes at the very heart of the nation's most vital point, the family circle. A hasty glance at the well filled prisons, jails, reformatories, insane asylums, hospitals and almshouses show us what alcohol is doing for the nation.

Besides, it is the underlying cause of American degeneracy and if continued our great republic will wither and die as did Greece, Rome, Babylon and Niniveh thousands of years ago.

But when we think of the trail it has left in millions of desolated homes, the pauper graves it has filled, widows and orphans it has created, lives of young men and women it has blasted, and the countless broken hearted mothers and fathers left in the wake of their dead, it is indeed a marvel that the American people do not arise in the majesty of righteous indignation, and smite the accursed traffic from the face of the land.

BIOGRAPHICAL SKETCH OF JEAN-MARIE CHARCOT.

By JULIUS GRINKER, M. D., CHICAGO.

Jean-Marie Charcot, one of the most distinguished physicians of all times, was born on the 29th of November, 1825. His name is inseparably linked with the progress of modern neurology. The most accomplished and foremost clinical teacher of modern times, his fame has reached every civilized country on the globe.

Not having been privileged myself to listen to the inspiring words of the great teacher, I must rest content with gleanings here and there from the writings of others who never seem to tire relating their interesting story of the great master. Curiously enough one cannot peruse a chapter in neurology without meeting Charcot's name more than once. What manner of man was he, wherein consisted his greatness? In the following I shall endeavor to answer these questions.

It was in the year 1825 that the boy who was destined to become a torch-bearer of modern science was born in humble quarters and of lowly parentage. Charcot the elder was a wagon-maker by trade and possessed of such limited means that only the most gifted son could possibly expect to be selected from among the rest to enjoy the advantages of a liberal education. Fortunately for us the choice fell upon the subject of our sketch,—young Charcot having shown great ability and capacity for diligent work while at school. The world may be grateful to the elder Charcot for his wise selection; he furnished one more demonstration that little learning is quite compatible with sound judgment. Young Charcot was permitted to enter the Lycée St. Louis, at that time the best academy of Paris. Having completed his preliminary education, the choice of a profession fell upon medicine, though the young man felt himself more attracted to the life of an artist, which liking a journey to Italy and a residence there of several months' duration may have helped to increase. Financial reasons finally exercised their inexorable logic, and medicine was definitely chosen. After passing through the medical school and serving as an interne in the Salpêtrière, an almshouse for old women, he took his doctorate degree in 1853. During the following three years he served as chief of the medical clinic in the Paris medical school, giving private instruction in the meantime in order to support himself. Later he was appointed physician to the Central Bureau of Paris, where his duties were to examine applicants for the hospitals and to assign them to the proper services.

While this young doctor was filling positions of slight importance he did not remain idle,—he studied hard for competitive examina-

tions to gain higher prizes. Hospital appointments in France are under governmental control and are awarded to those passing the best examinations. The applicants are usually young men of good character and fine education. They are given rigid tests and are obliged to write theses, which they must be capable of defending in public debate. Charcot succeeded in passing this examination in 1860, after a second trial. The subject of his thesis was Chronic Ulcerative Bronchitis. It was largely on account of the stubbornness with which he defended his position that he won the coveted prize, having been able to maintain his thesis against all opposition because of his complete mastery of the literature on the subject. In this respect he not only then but also in later years completely outstripped his French colleagues, who were noted for ignoring the literature of other nations. After Charcot had qualified for the position of attending physician he was able to select in 1862 the service of the Salpêtrière, where he had formerly served as interne. It is not surprising that he should prefer this hospital, for here there was collected enormous material, mostly chronic and incurable cases, which he could study whenever and for as long a period as he pleased. Many of the rarest cases he could not only observe and study for many years, but he also had the opportunity of following them to the post-mortem room. The unlimited pathological material which this asylum supplied undoubtedly helped to supplement his exact clinical observations. Thus he studied quietly for several years and laid the foundation for his future reputation.

After the great Vulpian's death in 1872 Charcot was made professor of pathological anatomy at the Faculty of Medicine in Paris, a position very much coveted by French physicians. Previous to that time he had delivered lectures on nervous diseases at the Salpêtrière,—work of his own choosing,—which he preferred to all his other activities.

In the year 1882, through his friendship with Gambetta, he was given the Clinic for Nervous Diseases at the Salpêtrière. Never before had this branch of medicine been recognized as a specialty, and it may truthfully be said that Charcot was not only the foremost but also the first neurologist.

And now came still greater official recognition of Charcot's merits. It was again Gambetta who caused the French government to create a new professorship for nervous diseases at the Paris school, to which Charcot was appointed, with a public clinic at the Salpêtrière. From that time until his death the annual courses of lectures were attended by students of medicine from every land. Char-

cot's clinic became the great Mecca whither flocked all those who made any pretense to a knowledge of neurology. While in the zenith of his fame and in the full possession of physical and mental vigor, Charcot died on the 17th of August, 1893.

Let us follow Charcot in his professional routine work, as one of his celebrated pupils and great admirer, Allan Starr, describes it:

"On three mornings of the week, at half past nine o'clock promptly, he would come to the dispensary of the hospital and seat himself behind a little railing, which separated him on one side from the patients, and on the other from the crowd of students, many of them foreigners, and all graduates in medicine. His assistants would then bring the patients, one by one, from the adjoining waiting room. A concise history would be given of the case. Then Charcot would ask some searching questions, would elicit some unexpected symptoms, would discover some physical appearance that others had not noticed, would examine the patient himself if there was any special point of interest, and then would quickly state his diagnosis, supporting the position taken, or discuss the probabilities or difficulties of diagnosis, often with interesting comments or some reference to the literature and finishing occasionally with some therapeutic suggestion. On Tuesdays the public clinic of the week was held in a large building just within the hospital gate. The room was arranged with a stage and footlights, and tiers of seats arose from the front and to quite a height in the rear of the room. As many as six hundred students could be seated and the place was always full. After the audience had gathered, dark shutters were closed at the windows, the footlights were turned up, and the clinic began. Charcot, attended by a number of his assistants, entered and seated himself on one side of the stage, at a little table, looking not at his audience, but across the stage. Then the patient or patients, for he usually showed a number at once, either to display variations of one disease or to draw contrasts with other diseases, were placed before the footlights, and sometimes, when a particular feature had to be demonstrated, a calcium light was turned on the patient, whose figure, the chief point of light in the darkness, could always be perfectly seen by all. In a distinct but not loud voice, with a slowness of speech that led to a clear understanding,—especially by the foreign element in the audience,—Charcot would describe the case, call attention to special symptoms, show the peculiarities of spasm, deformity or tremor or gait, compare them with other similar forms for the purpose of differentiation, and sum up the diagnosis. Then, dismissing the patient, he would begin to describe the lesion, and at once on the screen at the opposite side of

the stage the magic lantern would flash out the picture he wished to show, either in the form of a sketch made from nature, or an actual slide of the spinal cord, or a part of the brain magnified by the microscope, or a photograph of some unusual clinical type of the disease in question. Thus, symptomatology, diagnosis, and pathology, were presented in orderly succession, in a manner most clear and forcible, and with an effect that was most instructive and impressive." It has been said that the whole clinic was arranged for theatrical effect. Allan Starr answers this criticism by saying: "I believe that it was the only manner in which it was possible to demonstrate in a clear light to the large audience all the features, clinical and pathological, of the subject. But grant that it was theatrical; it left on the mind of the student a series of mental pictures of patients and of lesions which no amount of private study could possibly produce. It taught men so that they could not fail to remember. And what higher results can a teacher attain? And the students appreciated it. They gathered enthusiasm from Charcot's evident earnestness. No teacher has ever had the constant company of more devoted young men about him, eager to share in his study, to be directed in their investigations, to be considered a part of his working force. He had a faculty of engaging their interests, of stimulating their investigations, of directing their work. He supplied them with material and showed them how to use it. The result was that there appeared in France an enormous number of clinical and psychological researches in the department of neurology, all of them inspired by Charcot and carried out by some one of his pupils. He built up the school of Salpêtrière. One can hardly name a young man of eminence in medicine in France today who has not at some time been glad to call himself a pupil of Charcot."

When we consider the long list of his own articles,—his collected works fill more than a dozen volumes,—added to those in which his name appears as collaborator, there is presented a mass of medical literature far surpassing that of any other medical school in the world. And all this in spite of the fact that, according to Bourneville, Charcot was not fond of writing for publication; he states that it required two years of constant urging to induce Charcot to publish the first two volumes of his lectures and that he never would have given to the world any of his articles, had not some one of his assistants attended to the details of publication. Gilles de la Tourette tells us that of late years all of Charcot's clinical lectures were carefully prepared in writing, so that at the close of his lecture he merely handed his notes to one of his assistants, who was then able to arrange them

with the histories of the cases for publication. Those who followed his clinical lectures in the *Progrès Médical* know what a wealth of information they contain. To thoroughly appreciate the magnitude of Charcot's work, we should be compelled to mention individually almost every chapter in neurology to all of which he contributed freely. Early in his career as pathologist, it was the pathological side of neurology which he then cultivated. Among some of those early writings the articles on brain hemorrhage and softening, poliomyelitis, tabes, etc., must be mentioned. While some of his fundamental conceptions, such as the views on poliomyelitis, have been recently overthrown, in the main his work still serves us as a splendid foundation to build upon.

From the clinical side his labors on localization, secondary degenerations, insular sclerosis, and paralysis agitans, need especial emphasis. He also made profound studies of the arthritic disturbances of tabes (Charcot's joint), aphasia, Basedow's disease, progressive muscular atrophy. His work on amyotrophic lateral sclerosis (so-called Charcot's disease), stands out as another example of his masterly treatment of closely related but unclassified symptoms and of his ability to construct logical symptom-complexes, which aid the memory as well as the understanding. It was because of his great powers of observations, coupled with a wonderful facility to communicate knowledge to others, that he was enabled to recognize and describe diverse symptoms as constituting groups and so-called complexes.

The clinic having been thoroughly established, he now turned his attention to the study of hysteria. In his inimitable manner he demonstrated that hysteria is not a disease of females only, but is quite frequent in males and even in children; that it may occur in connection with organic disease and yet need not be part of it. On the subject of traumatic neurosis he took a decided stand against both Struempell and Oppenheim for creating a new nosologic entity; he maintained from the beginning that traumatic neurosis is largely hysteria, in combination with neurasthenia and sometimes hypochondriasis,—a view now pretty generally accepted. So-called intoxication-neuroses he considered as types of hysteria. Many who saw nothing but ovarian irritation in hysteria, strenuously opposed Charcot, but everybody now admits that he was right after all. Having recognized hysteria as a psychic disorder, a view subsequently followed up and defended by his pupils, notably Pierre Janet, and latterly, the much-talked of Sigmund Freud, Charcot was the first to have taken a correct view of this multiform disease. Charcot subsequently studied hypnosis, a hitherto neglected subject, into which he

infused general interest. While spending considerable of his energy on these diverse problems, he worked incessantly on brain and cord localization, all the while continuing to publish numerous articles on nervous topics in the *Archiv de Physiologie*, *Archiv de Neurologie*, *Progrès Médical*, *Iconographie photographique de La Salpêtrière*, and the *Nouvelle Iconographie*.

From this it must not be inferred that only neurology profited by Charcot,—internal medicine and pathologic anatomy received equally important stimulation through his individual participation. From his own pen appeared articles on liver disease, senility, gout, rheumatism, albuminuria. It must also be remembered that it was largely through his efforts that clinical thermometry was introduced into practice in France.

Though his great aim was the careful observation of the sick and examination of the dead, he paid considerable attention to therapy as well, notwithstanding the criticism of his adversaries, who say that he cared little for the therapeutic side of medicine.

It was fortunate for neurologic teaching that Charcot in his youth had devoted considerable attention to art, for his knowledge of drawing was of immense use to him in elucidating neurologic topics, both in the medical journals as well as in the clinic room. Those who heard him say that his delivery and address was splendid and all seem pretty well agreed that his great success as a teacher was not only due to the wealth of new ideas which he taught, but also to the delightful way in which he taught them.

Charcot did not have to wait for posterity to recognize his worth. Honors came to him fast and in plenty even during his lifetime. He had been president of all the chief medical societies of Paris and he was a corresponding member of numerous societies of every city on the continent of Europe; of the New York Academy of Medicine, of the New York Neurological Society, of the College of Physicians of Philadelphia. He was made a member of the Institute of France in 1883 and Commander of the Legion of Honor in 1892. It thus may be said that France honored herself by conferring honors upon this great man. Few Frenchmen have done as much as he to support the waning French authority in matters of science, or assisted to the same degree in preserving the fading reputation of the French school of medicine. Charcot was a man of great dignity, calm repose, even temper, slow thought and utterance. In appearance like Napoleon and in manner reserved and observant, he was not the type of man to be popular, but his dignity was one that was felt to be appropriate to a man of great power and was never assumed. His relation

to his pupils was one of mutual interest and affection. Never familiar with them, he always respected and sought their opinions, was never autocratic in the direction of their work, and was always the subject of their devoted admiration and respect. Without the personal characteristics of the noblest type, no man could have kept about him such a galaxy of able co-workers, all loyal to him in the midst of their labors and continuing the work he began even after his death.

Charcot's domestic life was a delightful one. He was married early in life to a lady of considerable wealth, who was enthusiastic in his work, without whose aid many of his undertakings could not have been carried out. Two children, one a boy whom it was his fond desire to see succeeding as a physician, has already taken high rank in the medical profession. During his leisure hours he took a great interest in art. He was a designer, a painter on porcelain and in oil. The tiles in his study mantel and the ceiling of one of his salons were painted by his own hand. Many of the drawings displayed in his lectures and published in his books were made by himself.

Like every man of eminence, Charcot had his enemies, critics in science, rivals in medicine. Yet after everything had been said, it must be admitted that Charcot was the greatest French physician since Trousseau, the greatest ornament of the medical profession of the present age.

SUITE 400 RELIANCE BUILDING.

THE ALIMENTARY CANAL TALKS.

By J. N. HURTY, M. D., INDIANA STATE HEALTH COMMISSION.

I am your Alimentary Canal. I ask you to listen to me for you will find it to your advantage. I am a faithful servant, patient and long suffering.

I am thirty feet long and you can have my length, strength or weakness to you, just as you wish. If you abuse me, I shall struggle hard to withstand the abuse and adapt myself to it. However, if you are such a fool as to carry your abuse too far, then look out.

I will tell you what a plenty I'll do to you if you persist in abusing me. I'll quit discharging. Then you will whip me with cathartics. This will seem to you all right for a while, but really conditions will be worse finally, for I will not stand your whippings and will quit on you again. After this second quitting I shall make some poisons and put them into your blood. This blood will distribute them to every cell of your body and then you will have pimples and eruptions, bilious attacks, coated tongue, foul breath, sweaty hands, cold, clammy skin, lusterless hair, putty complexion, dulled vision, dulled taste, dulled smell, dulled hearing, loss of memory, loss of continuous thought and attention, headaches, dizziness, dyspepsia, loss of weight, loss of strength, rheumatism, insomnia and all kinds of pains and aches. Your hair will fall out, your teeth will decay, you will have shortness of breath, your nails will become brittle, your skin will become dry and harsh, cancer may appear, and premature old age and a miserable lingering death will be your portion.

I do not want to bring all of this damage with its consequent suffering upon you. I would much prefer not to poison you, but its God's law and I shall obey if you abuse me.

WHAT'S THAT! You want me to tell you how not to abuse me? I will gladly do it.

Don't send down into me any kind of food which is not well masticated. Don't send down alcohol, spices, vinegar, pickles and mustard. Spices and mustard irritate and stimulate my mucous lining and the tannin in them puckers my pores and hinders elimination. They don't help digestion as you may probably think; they finally break me down. They are an abomination.

Don't send down flesh. All kinds contain putrefactive microbes which make poisons and gas in the colon.

Don't send down ham sandwiches smeared with mustard, they are poison. The ham is embalmed hog, embalmed with chemicals,

namely saltpeter, salt and creosote, embalmed much like the mummies of Egypt were.

Dr. Wiley says chemicals should not be put into foods and hence the fight against benzoate of soda. To be sure, man has for generations eaten ham and mustard, and all the time they have been a potent factor in causing autointoxication with its production of loss, of resistance, premature old age and low duration of life. I cannot extract strength for you from stuff which ferments, putrifies and makes poisons.

If you want to further injure me so that I cannot serve you well, send down lots of strong tea and coffee. The tannin in them will pucker my (your) mucous surfaces and stop the flow of juices, causing constipation and their drug, caffeine, will whip your nerves and excite your kidneys. And if you once get your nerves on edge and get your kidneys mad, you'll have plenty of pains and miseries. Bright's disease is not nice and neurasthenia makes you a nuisance to others, and to yourself.

What shall you eat? That is a simple question. Don't eat stuff which makes poison. Flesh, coffee, tea, vinegar, spices, pickles, and alcohol, all make poisons. Especially give me sour milk—butter-milk you call it. It's fine for making strength and a clear brain. Rice whipped Russia. Give me rice. Give me grits, hominy, mush, corn-bread, wheat bread, rye bread, oatmeal, potatoes, beans, onions, melons, oranges, celery, cabbage, parsnips, carrots, apples, pears, cherries, grapes, pineapples, bananas, grape fruit, tomatoes, etc., etc. There is an abundance of foods which do not make poisons. And for the sake of sanity, don't say as some fools have—"I'd rather live fewer years and have some fun than eat as you prescribe." Is it fun to be sick? Is it fun to be bent and twisted with rheumatism? Is it fun to have dull wits, dull sight and dull hearing? Is it fun to have loss of memory and to enter doddering old age at the time you should be strong, healthy, useful and happy? Go to, for you are indeed a soft-head and a fool to want to eat stuff which sickens and kills you and call it fun.

Yes, I am your intestinal canal. My smile makes glad and my frown is terrible. I will smile if you are wise and I will frown if you are foolish. Come on with your poison making foods, and like Sampson, I will break and pull down the pillars which support the temple (body) of your soul, and then there will be a ruin commensurate with your foolishness.

REPORT OF THE MEDICAL DIRECTOR OF THE HOT SPRINGS RESERVATION, ARK.*

OFFICE OF MEDICAL DIRECTOR,
HOT SPRINGS, ARK., August 22, 1911.

SIR—I have the honor to submit my report covering the period from September 4, 1910 (the date on which I reported for duty), to June 30, 1911.

GENERAL STATEMENT.

The office of medical director being a newly created one, the duties were outlined by the department as follows:

(1) Full supervision of sanitation, hygiene and hydrotherapy—in short, all that pertains to the bathing of patients in the leased bathhouses, both on and off the reservation.

(2) Full charge of the government bathhouse and the employes therein.

(3) Maintenance of a clinic for the education of bathhouse operators and their attendants.

(4) Determination of the fitness of all attendants, physically and otherwise, for the employment in bathhouses, both those operated by lessees and the government bathhouse.

The reasons for the establishment of the office may be stated briefly as a recognition of the fact that all of the federal government's interests here are based on the use of the hot water as a therapeutic agent. The problems of administration grow out of the intent of the acts of Congress of April 20, 1832, and of December 16, 1878. By these acts the curative value of the water was publicly and officially recognized, and its use was to be restricted and regulated by the federal government through the Secretary of the Interior, with the view to the single purpose that by preventing monopoly and commercial exploitation, it might be made permanently available for the people. The Hot Springs Reservation was the first national park to be established, and the reputation of the water is so great that it should be classed among the national resources or public utilities.

In the year 1880 the federal government relinquished control over a large part of the original reservation contiguous to the springs, and the state assumed jurisdiction. This act has seriously interfered with the intent of the acts of 1832 and of 1878 so far as commercial exploitation is concerned, and is largely responsible for the

*By courtesy of the Department of the Interior.

development of various systems of graft commonly referred to as "drumming." The baneful influence of this system on the visitor and its deleterious effect on the development of the city it would be difficult to overestimate.

The results obtained in the treatment of patients are very greatly influenced by the prevailing municipal conditions. As there is only one hotel on the reservation, which, by reason of its rates, caters to a limited class, the average visitor necessarily procures board and lodging in the city, and is dependent upon the local government for the protection of his rights and interests. He must purchase his medicine and bath outfit from a local drug house and, as the government makes no provision for medical advice, he is dependent on physicians of the city for professional services. Section 4 of the act of April 20, 1904, authorizes and directs the Secretary of the Interior to make rules and regulations governing the use of the water of the springs, and the act vests in him the duty of determining the eligibility, morally and professionally, of physicians who make application for authority to prescribe the water. But the visitor is dependent upon the municipality for protection from quacks and charlatans, and from the commercial exploitation of secret remedies. These pseudopractitioners and unscrupulous venders of medicine find a lucrative field for their operations in the constantly moving procession of those who come in good faith to be benefited by the water, which in a more or less definite way they understand to be approved, sanctioned, recommended, and controlled by the federal government.

Hot Springs has a population of about 15,000, while the number of visitors annually is estimated to be more than 100,000. The actual number of people residing in the city at any one time is probably about double the census population. The difficulty of financing the local government under these conditions is closely related to, if not the direct cause for, the existence and continuance of many conditions which tend to lessen the benefits to be derived by the patient from a course of treatment here.

The report of the city clerk shows that the municipal expenses for the year 1910-11 were \$119,291.43, and that they exceeded the income by \$30,397.90. The principal sources of revenue were from taxation, \$33,380.52; saloons, \$36,800; police court fines, \$15,545.25. The income is inadequate to meet even current expenses, and municipal improvements many of which are greatly needed, cannot be effected. The deleterious influence of an excessive number of saloons, of gambling houses, and other objectionable resorts can never be eliminated or brought within reasonable bounds so long as the city is

absolutely dependent upon their tolerance for so large a proportion of the revenues necessary to maintain the government as it is. Of the gross taxes 80 per cent go to the state, county and schools, leaving only 20 per cent for city purposes proper. These conditions have necessarily retarded the growth of this resort, and it is essential to its satisfactory development that some means for greatly increasing the revenues be devised.

At watering places abroad, where the government exercises jurisdiction over the neighboring municipality, it is customary to tax the visitor for the support of public utility services as it has long been recognized that with a large nontaxable floating population, it is impracticable to maintain satisfactory civic conditions, and to enforce law and order, on the same basis of revenue that pertains to other cities. It would appear practicable to adopt this system here, or the same result could be effected by diverting a part of the proceeds from the baths were it not for the divided jurisdiction and the leasing of the water privileges to private interests.

The second great resource of Hot Springs is its unusually fine climate, which makes out-of-door life not only possible but enjoyable almost every day in the year. Overworked business and professional men, and all who need rest and recuperation, find here in the reservation walks and drives, and in visiting the many interesting points in the vicinity, on the golf course, and at the Country Club, forms of recreation that have a powerful influence in the restoration of health and strength. Much greater development of these features, however, such as the improvement of roads and streets, the erection of a casino for the maintenance of the better class of amusements and entertainments, as well as the establishment of a street cleaning department and a larger police force, could soon be effected were it not for the unfortunate conditions which prohibit the expenditure of the reservation funds or of appropriations from Congress except on the existing permanent reservation, or if local legislative measures could be devised to produce the required revenue.

The development of the city and the value of property depend finally on the therapeutic results obtained from the use of the water. Every business interest is established and maintained to meet the trade demands growing out of the presence of those who come here to use the water. Yet, instead of aiding in the development to its utmost of this one great resource by building up a broad, high-grade, and strictly ethical medical service, there has been permitted to grow up a system of drumming founded upon commercialism, deceit, and falsification that has resulted in unsatisfactory service and been

a fruitful source of grievance. It has been the cause of sending back to their homes many dissatisfied patients and often of impairing the confidence of nonresident physicians in the beneficial results to be obtained by treatment here. When it is remembered that the diseases which are most favorably influenced by the water are so common that every practicing physician is repeatedly brought in contact with those suffering from them, and that a considerable percentage of such persons themselves suggest coming here, it is evident what a tremendous advertising medium exists, be it for good or bad, in those returning to their homes. While the solicitation of patronage has commonly been so cunningly conducted that the visitor did not know at the time that half of his fees were diverted to an agent, the average American is sufficiently intelligent to have realized the conditions before he left town, and to have determined whether or not he has received a just return for his money. It rests almost exclusively with the taxpayers and voters of the local community to determine whether the influence of the people leaving Hot Springs shall tend to bring to this resort a greater or lesser number of visitors in the future.

There is a marked and general awakening within the last few years throughout all civilized countries, finding expression through local, state, national and international organizations, as well as through the public press, to the importance of hygiene, sanitation, and preventive medicine. These subjects are being included in the course of study in the public schools. The antituberculosis crusade, the pending bill for the establishment of a department of public health, the elimination of yellow fever from Cuba and of the bubonic plague from California, the prevention of typhoid fever among the troops on the Mexican frontier, and the exclusion of cholera from the Atlantic seaports are all matters of vital importance and public interest. They have been heralded throughout the length and breadth of the land, so that the average citizen has come to more fully realize the value of scientific methods in medicine and the fact that many diseases are preventable. He is more critical and exacting, and has increasing fear of contracting diseases wherever the laws of sanitation are not enforced. Service in the bathhouses that was acceptable a few years ago is no longer so. The building of the two new houses now in process of construction will mark a great step in advance, and other old and insanitary buildings will soon be replaced by new, modern structures.

The general conditions surrounding the visitor coming to Hot Springs for the benefits to be derived from the water gave rise to so

much dissatisfaction and to so many complaints that, within the past few years, four separate reports by specially qualified commissioners have been prepared under the direction of the Secretary of the Interior, with a view to determining what steps were practicable for bettering both the environment and the treatment. In each case the conditions above referred to were treated at length, as was also the service of the bathhouses, and the recommendation made that the medical and sanitary work be placed directly under medical supervision. The conditions and customs relating to the actual administration of the baths and the operations of the bathhouses were fully discussed. As they were not essentially different from those existing when the office of medical director was constituted in September last, they will be taken up under the several duties assigned him.

SUPERVISION OF SANITATION, HYGIENE AND HYDROTHERAPY.

The first duty assigned to the medical director was outlined as follows: "Full supervision of sanitation, hygiene and hydrotherapy—in short, all that pertains to the bathing of patients in the leased bathhouses both on and off the reservation."

Under this heading matters of sanitation and hygiene are being dealt with by inspection of the bathhouses and by class instruction of the attendants. Generally there has been displayed on the part of the managers a willingness to co-operate for the improvement of the service, but there have been a few exceptions. Complaints from bathers as to conditions of uncleanness are received with sufficient frequency to indicate that considerable improvement is yet possible. The personal equation of the manager is very evident, and the houses might easily be designated as first, second and third class, largely in accordance with his efficiency.

"All that pertains to the bathing of patients," as a part of the first duty assigned this office, has in the past had a very close and direct relation to the drumming heretofore mentioned, for this practice was largely relied upon to procure patronage to the exclusion of that form of competition which has for its basis the most efficient service. After the patient was once turned over to the hotel or boarding house, to the doctor, to the bathhouse, to the druggist (and not unlikely to a gambling house), and made to pay in advance at each, there was little more to be derived from him, and it became expedient to economize wherever practicable in the service rendered. While these conditions are undoubtedly much less obnoxious than they were a few years ago, and while through the efforts of the present superintendent, drumming on the trains has been eliminated and

the bathhouses may be said to have given up the practice, it still persists in less obtrusive forms. Inasmuch as doctor drumming is the essence of this evil, which will cease to exist whenever all the doctors decline to avail themselves of the services of the drummer, it is urged that too great stress cannot be laid upon the importance of a rigid inquiry into the character and history of applicants for registration, and a sufficiently thorough examination made to exclude all who are not graduates of first-class medical colleges and thoroughly competent to practice their profession.

The fact that the average physician's practice here is largely made up of transients, many of whom may never be expected to return, who are strangers to the town, and who have no special preference in employing a physician beyond a recommendation that may reach them through the drummer, makes the elimination of this practice all but impossible. Its complete extinction must depend, finally, upon the ethical sense of the physicians.

There is great need for some form of hospital service to afford relief to those who come to avail themselves of the privileges of the government free baths. A few are practically helpless when they arrive. The progress of incurable disease deprives some of the ability to earn a living, and as they are unable to return to their homes they become charges upon the city. A considerable number require surgical treatment that can only be given in hospitals. Some need nursing, some food and clothing. Many require treatment that cannot be given at the bathhouse. Occasionally insanity develops, and as such cases are not admitted to any of the hospitals, the city jail is the only available place for their care and restraint. As the city's resources are already heavily taxed, and as there is a feeling that these helpless indigents come by invitation of the government, very limited and inadequate accommodations are provided.

Another greatly felt want is some provision whereby patients can obtain proper food. Suitable diet is of great importance in many conditions, and the average patient living in a boarding house is unable to carry out his physician's directions in this particular.

The establishment of a Young Men's Christian Association, with dormitories and other facilities pertaining to the work of this organization, would undoubtedly be of great advantage to many.

THE SERVICE OF THE BATHHOUSES.

Many of the buildings are old, poorly planned and insanitary. Total reconstruction is necessary to obtain satisfactory conditions in several, and very extensive remodeling in nearly all. There is not a

single instance of anything approaching good ventilation, and in most there may be said to be none at all, for it is necessary to keep the windows closed to avoid drafts to which the patients are very susceptible while bathing. The vitiation of the air in the bath halls and cooling rooms is very great, and when combined with the odors from the bodies of the perspiring patients and the vapor of the hot water at the high temperature maintained, the conditions become objectionable and insanitary in the extreme.

One of the most unsatisfactory features of administration comes from the small size of the houses, and the general assumption that one person in a supervisory capacity is sufficient. The result is that in no single instance is there anyone to efficiently oversee and direct the bathing. The manager, who is the only person in charge, is so closely confined to his desk, and so fully occupied in selling, punching and redeeming tickets, locking up and unlocking valuables, caring for umbrellas and coats, and in answering inquiries, that it is rarely possible for him to be in the bath halls more than a few minutes at a time until after bathing hours, and consequently he has very little knowledge of how accurately the bathing directions of physicians are being carried out. The possibility of devoting his attentions to the actual service that forms the basis of the lease is always in inverse ratio to the number of patients being treated.

There should be a head attendant in each bathing department to see that the baths are administered with careful attention to details, and to supervise and direct the work of the attendants. He should not be permitted to bathe patients himself, nor to be absent from the bath department proper during bathing hours. To procure the services of competent men a salary of not less than \$75 per month should be paid. More complaints are made by physicians upon this point—the lack of supervision in carrying out bathing directions—than on any other one feature of the service.

The employment of exclusively supervisory head attendants for each bathing department may not be at once practicable, especially in the smaller houses where the number of tubs does not justify the expense. But certain measures of supervision should be insisted upon, while plans for the erection of new buildings, or for the remodeling of old ones, should require such enlargement as would make the essential feature of thorough and effective supervision in administration a matter of course.

As indicating inefficient supervision, the clocks used in timing the baths are not infrequently found stopped, recording a time several hours past, a number of patients having been bathed in the mean-

time. This is partly due to negligence, but partly to the attendants being required to provide the clocks, with the result that a cheap and inferior timepiece has been purchased.

The same general criticism may be made on the thermometers. The use of these instruments of precision was required in order that the baths might be administered at the exact temperature prescribed, but those provided were of so cheap a grade and so grossly inaccurate that it is certain in many instances the temperature of the water could have been more correctly determined by the hand. A rough test of the accuracy of the thermometers in use was made November 3, 1910, by placing 242 of them in a tub of water at 98° F., with the result that only 90 recorded the true temperature. Fifty-seven showed variations between 4° and 31°, while the difference between the highest and lowest reading was 59°. In eleven the columns of mercury were broken. To correct these conditions orders have been issued directing the use of standardized instruments.

The hot rooms are of the old type, and are so constructed that the patient has to breathe the foul and superheated air of a small chamber or cabinet. In the new houses now in process of construction there will be modern equipment, and sweating can be produced in the hot air cabinets while the patient breathes the air of a well-ventilated room. With this arrangement it is believed that the temperature of the bath halls can be reduced to about 90°, thus making the conditions much more tolerable.

Heretofore there has been very little tendency to employ the various forms of baths described in textbooks on hydrotherapy. The benefits obtained have been ascribed to the water almost exclusively, rather than to varying methods in its use. The new houses, however, with more complete equipment, will provide opportunities to make use of these different methods should physicians desire to employ them.

During the past six months a number of pieces of sanitary white-enamel iron furniture have been tested, and its superiority should cause it to be installed in the bath halls, cooling and dressing rooms. The wooden furniture heretofore in use soon loses its varnish, becomes soaked with water and perspiration, and stained with soap and dirt, so as to appear very unattractive.

Another objectionable and insanitary feature is the method commonly employed of keeping the bathers' soap. Patients complain that they do not get their own cakes of soap, or that their soap has been used on some one else, and often express the fear that they may in this way contract disease. Steps have been taken to correct this,

and it is believed that a satisfactory system will be installed in the near future.

The laundry service has been as a whole very unsatisfactorily performed. Rule 12 of the bathhouse regulations has been interpreted to require the attendants to wash the towels, and where they have also had to provide soap for this purpose undue economy in its use has commonly been practiced. Few houses have a laundry equipment in any way commensurate with their needs, nor is it possible in the present buildings to install one. Towels are not sterilized except in rare instances, nor is there generally efficient supervision exercised over this process. This part of the service has been dealt with at length in special reports, and it is hoped that an acceptable plan for improvement will soon be in operation.

The method commonly employed of cooling the water in uncovered tanks is open to several objections. First, and of greatest importance, it is the generally accepted belief that the remedial properties are in the contained gases. The water has been found to be radioactive, and its therapeutic value is greatly lessened when it has been long exposed to the air. During the summer months it is difficult to cool it sufficiently, and at times it has been necessary to use the city water to obtain the desired effect. Contamination by dust and insects is unavoidable with the open tanks. At one establishment an improved system has been installed in which the cooling is effected in closed pipes, but this particular plan is probably impracticable for general use. It is asserted by physicians that the results of treatment in this house are much better than when the water was cooled in the open tanks. The best possible water service is of paramount importance, and the advice of a competent engineer should be obtained to devise a satisfactory system.

The physiological effects of the water have never been scientifically and accurately determined, and as its rational use cannot be thoroughly understood in any other way it is recommended that a competent physiological chemist be employed to conduct a series of experiments in this direction.

In most houses massage and mercury-rubbing departments are maintained. These have frequently been criticised by physicians chiefly on account of a tendency on the part of the operators to diagnose and treat cases themselves, and to solicit patronage in objectionable ways. This matter has been the subject of a special investigation and report, and doubtless will be satisfactorily adjusted at an early date.

Great interest is felt as to the probable effect of the already wide-

spread use of salvarsan on the number of patients coming to Hot Springs for treatment. Should this new remedy prove as efficient as has been predicted there may be a material diminution in the number of bathers; but as this reduction will be almost wholly among those who are suffering from a disease the prevalence of which in Hot Springs has tended to prevent many of the better class from visiting this resort on account of forced association with these unfortunates, it is not unlikely that the ultimate result will be most gratifying.

The use of common drinking cups, hair brushes and combs has been discontinued, and, in so far as it has been practicable with the old houses, carpets and mattings have been removed, and draperies replaced by sheets that can frequently be laundered. All of the new houses should be screened throughout, that flies and mosquitoes may not transmit infectious diseases.

GOVERNMENT FREE BATHHOUSE.

The second duty assigned was the full charge of the government bathhouse and the employes therein.

In the center of bathhouse row and in the rear of the line of leased bathhouses stands the government free bathhouse, established by act of Congress of December 16, 1878. This benevolent institution is another mark of the recognition by Congress of the great and general faith in the curative properties of the water, amounting to an invitation to the indigent invalids of the entire country to come to Hot Springs for relief. These sufferers have come from every state in the Union, and are still coming, often as a last resort, and in the hope that the mysterious and miraculous water may cure after their home physicians have failed to afford relief. Churches, fraternal organizations, relatives and friends often contribute small amounts to enable the sufferer to obtain the benefits of a course of baths. Frequently a man beats his way on a freight train and arrives practically destitute, and at times unable to work, thus becoming at once an object of charity. A considerable number come in the belief that the government maintains, in conjunction with the free bathhouse, a hospital or home at which they will be cared for in every way. Not infrequently the progress of disease results in a degree of helplessness and destitution pitiable in the extreme. At times practically the last cent has been spent in coming here for conditions in which the baths are of little benefit or even contraindicated.

Here may be seen one of the great clinics of the world. During the fiscal year ended June 30, 1911, there were given in this institu-

tion 220,435 baths. There has been heretofore no medical supervision. Practically all applicants who declared themselves unable to pay were admitted with very little, if any, reference to the nature of their disease or whether such treatment was likely to prove beneficial or the reverse. There was no one qualified to determine these questions. Cases of cancer and tuberculosis were bathed, and occasionally small-pox and other infectious diseases crept in until accidentally recognized by the manager, or by one of the attendants. Many came for conditions that could not possibly be materially benefited by the water, thus delaying proper treatment, while incurring the unnecessary expense, suffering, or inconvenience incident to a separation from home and friends, and finally departing with the impression that the baths were of no value or that their cases were incurable. Others have fallen ready victims to quacks, nostrum frauds, and irresponsible venders of secret remedies. Many held tickets issued months previously, occasionally taking a bath simply for cleanliness. Young children not suffering from any disease whatever were allowed access, and were brought in close contact with the most repulsive forms of venereal diseases. Patients were admitted without regard to the number already in the bath halls, so that during the most favored hours it was difficult to walk between them without soiling one's clothes by contact with the perspiring bodies of waiting bathers. There was no ventilation, and the foul air and offensive odors were beyond belief.

The inauguration of a system of issuing tickets good only for certain specified hours has eliminated this overcrowding. To still further correct existing conditions and abuses a decision was requested as to whether baths were to be furnished to all indigents, or only to those who were suffering from diseases likely to be benefited or cured by bathing in the water. This question was appropriately dealt with by the department, resulting in the passage by Congress of the act of March 2, 1911, limiting the privileges of the baths to those who are suffering from ailments for which bathing in the water of the hot springs will afford relief or effect a cure, and who make oath that they are without and unable to obtain the means to pay for baths. This legislation has proved to be of the greatest value, in that it enables the officer in charge to exclude those whose condition would be made worse, those who could receive no benefit, those who are not sick but have been in the habit of coming for a weekly cleansing, and healthy children who apply unaccompanied by parent or guardian.

Attention is respectfully invited to the great need for a new building. Congress made an appropriation in 1890 for the erection of the

present structure, and from that time to this the records, so far as obtainable, show that nearly 4,000,000 baths have been administered therein. The evidence of wear and tear attest the truth of these figures. The stone steps at the entrance have been half worn through by the feet of invalids who have here sought relief. The house is less than half the size required for modern service, and only accommodates the patients by the use of pools in which large numbers bathe at the same time. Necessary adjuncts, such as examining rooms, a dispensary, an emergency ward, office accommodations, and all forms of equipment for scientific hydrotherapy are entirely lacking. There are a few tubs, but the therapeutic resources do not extend beyond those of the municipal free baths of other cities, except that the water from the springs is used instead of city water. There is no possibility even of regulating the temperature of the bath to individual needs, except for the few who can be bathed in the tubs. Modern hydrotherapy has developed many different ways of using water, with quite as varying effects as may be obtained from drugs, and it should be made possible to introduce and use these improved methods.

The present building can never be made sanitary at a reasonable cost, nor can it be satisfactorily enlarged. There is practically no ventilation; the toilets are insufficient in number; the roof leaks at both ends of the building; the plaster has fallen in several places; and the water service, including the tanks, will soon need extensive repairs. These conditions are not conducive to improvements in the pay bathhouses, and the government is represented by a markedly inferior service. It is recommended that the building be abandoned at the earliest practicable date, and that a new, model house, with complete modern equipments, be provided.

Allotments amounting to \$375 have been made for the purchase of medical supplies which have been dispensed to those unable to procure them, but no attempt has been made to furnish treatment except where the need was great. A complete medical service would require a considerably increased personnel.

It is very desirable that the attendants in this house should wear uniform white suits, and that in cleanliness and personal appearance they should serve as examples for the employes of the leased bathhouses. Their pay, however, is less than half that of the latter in many instances, so that this cannot be effected unless the department furnishes and launders the suits, as is the custom in some hospitals. It is believed that the example in neatness, cleanliness and sanitation would be well worth the cost.

BATHS ADMINISTERED AT THE GOVERNMENT FREE BATHHOUSE FOR THE
FISCAL YEAR 1910-11.

Applications for free baths.....	9,374
Applications for free baths refused.....	300
Tickets issued on original application.....	9,074
Tickets reissued on original application.....	5,972
Total baths given white males	138,840
Total baths given white females	22,601
Total baths given colored males	41,819
Total baths given colored females	17,175
Total baths given during year	220,435
Average number of persons bathed daily.....	618
Soldiers and sailors bathed.....	712

SUPERVISION OF ATTENDANTS.

The third and fourth duties assigned this office, the "maintenance of a clinic for the education of bathhouse operators and their attendants" and the "determination of the fitness of all attendants, physically and otherwise, for the employment in bathhouses, both those operated by lessees and the government bathhouse," may be best considered together.

Heretofore the bath attendants, about 300 in number, although expected to carry out the written directions of physicians, have never received instructions in their duties from a competent source, nor have they been required to qualify in any way. Upon examination a few were found to be absolutely illiterate and unable to read the bath directions, while a considerable number were so nearly illiterate that it was extremely doubtful if they could render intelligent service. The majority, however, have a common-school education and are appreciative of the benefits to be derived from the department's policy of affording them an opportunity to more thoroughly fit themselves for their work. The only available room for class instruction was in the upper story of the government free bathhouse, where by removing a partition accommodations were made for about forty. The first class was organized October 17, 1910. This work, owing to the limited facilities, has progressed more slowly than is desirable, but by successive classes a short course of instruction has been given to 178 attendants, with the result that 119 have been accepted and granted certificates of qualification, authorizing their employment for the period of one year in any of the bathhouses receiving water from the hot springs.

The rejections, fifty-nine in number, were for varying degrees of

illiteracy, alcoholism, lack of attention to duty, and persistence in wearing old, unsightly and dirty clothes.

This class work marks the first step in the development of a corps of selected and trained attendants. It will require considerable time to produce satisfactory results, but by persistently following out a policy of instruction for those who are willing to learn and the elimination of those who are unfit, the efficiency of the service will ultimately be greatly increased. Growing out of the experience gained in teaching these first classes new regulations for the direction of attendants have been formulated and applied in harmony with the changed conditions.

The purpose of this report is to call attention to conditions which it is desirable to remedy and which are being bettered. The business interests of the city have displayed great activity in advertising, but to make this fully and permanently effective it will be necessary to establish the best possible treatment of patients in that broad sense which includes not only the services of physicians and the administration of the baths but also the development of those environments which aid in the restoration of health and the extinction of those which are deleterious. While progress may be expected under existing policies, the divided jurisdiction will preclude the best conditions so long as it continues. This seems to have been recognized by Congress in the act of 1832 which directed that the reservation should consist of four sections of land, with the hot springs in the center. It was evidently realized at that time that water alone can not make a spa, and the intent was to provide for the development of a surrounding municipality under the same government as the springs. The opinion is expressed that Federal jurisdiction over the city of Hot Springs would do much in furthering the development of this resort.

Very respectfully,

HARRY M. HALLOCK,

The Secretary of the Interior.

Medical Director.

THE CHICAGO MEDICAL RECORDER

AND
JOURNAL OF THE MEDICO-LEGAL SOCIETY
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Editorial.

CATS.

No better health sermon has recently been preached than the paper of Dr. Caroline A. Osborne of Worcester, Mass., in the May number of the MEDICAL RECORDER, under the title of "The Cat and the Transmission of Disease."

The cat has been under indictment for a long time, but Dr. Osborne finds it guilty and sentence is passed. Dr. Osborne shows that the cat may be afflicted with many communicable diseases and may convey them to members of the household. What is equally important, the doctor truly claims that the cat is a failure as an exterminator of rats and mice. The abundance of both of these pests in town and country alike demonstrates the truth of her statement. The utility of the cat has passed. There are more efficient methods of exterminating rats and mice, and they should be utilized fully and promptly. At the same time, the cats and the house dogs should go. All are a menace, along with the flea, the mosquito and the house fly.

Every householder should read the lucid and convincing argument of Dr. Osborne.

PULPIT SANITATION.

On May 27th, 1912, the Church Federation Council of Chicago took cognizance of vice as a cause of disease and of the necessity for those contemplating matrimony being in good health, so that if blessed with children they may give to the world offspring that are healthy and strong instead of those that are weakly or diseased.

The action of the council indicates that clergymen are alive to their responsibility and will become a powerful agency in the educational work that is necessary in building up the race, as well as in all other work of sanitary reform and disease prevention.

It will be through an extension of the knowledge of how disease is conveyed, rather than through the force of the police power of the state, that eugenics will prosper. With every pulpit expounding the doctrine of sanitation in its broadest sense, the next generation should see the death rate in Chicago lowered to ten in the thousand.

DANGER IN MILK.

Forty-three cases of scarlet fever caused by infected milk, with three deaths and two more not expected to live, is the report from Denver, Col., May 11, 1912. An employee at the Brookridge Dairy, "recognized as the most perfectly managed dairy near Denver," was afflicted with a mild unrecognized attack of scarlet fever and kept at his work.

Many diseases are from time to time conveyed through milk, and against this serious danger the public have not adequate protection. State laws, city ordinances and the reports of milk commissions, aside from their educational value, do not protect the public against infected milk. There does not seem to be any way to prevent such danger and death as occurred at Denver except to cease using milk in its raw state. Milk is not a necessity for children's diet after they have been weaned from the breast or the bottle. If milk is to be fed to children it must be thoroughly sterilized by heat before using.

This feature of milk as a diet deserves the earnest attention of physicians. Milk in its raw state as a diet for children came in vogue in the days when every family kept a cow and the milk could be used before it became impaired by age or infecting germs had time to multiply to the point of their greatest virulence. Milk that is served in

cities is a different thing because of its age, and this fact physicians might keep before their patrons' minds more generally than is done.

HUMAN FOOD.

A woman has walked from a newspaper office in New York to a newspaper office in Chicago, and has made an average of twenty-five miles a day. She claims to have made the journey to demonstrate the utility of a diet of raw vegetables and fruit, and to have taken no meat on her trip and most of the way only raw vegetables and fruit, with no water or drink other than fruit juice.

No good can come from such spectacular performances. No new truth has been demonstrated and no good done to anyone except to the newspapers which she advertised. The character of human teeth demonstrates that man can live on either animal or vegetable diet, or on both together. People differ in their diet needs as they do in other things, depending upon age, occupation, temperament, etc. No flat rule of diet can safely be laid down for all persons. It may, however, be safely stated that those of sedentary habits generally eat too much. Most people suffer some time or other with troubles arising in faulty digestion, and a limitation of food to the bare and actual need for nourishment always cures them.

Book Reviews

HEREDITY IN RELATION TO EUGENICS. By Charles Benedict Davenport. Carnegie Institution of Washington Director, Department of Experimental Evolution Cold Springs Harbor, Long Island, N. Y. Secretary of the Eugenics Section American Breeders' Association, New York. Henry Holt and Company. 1911.

This volume, which has been made possible through the financial assistance of Mrs. E. H. Harriman, comes at an opportune moment for the medical practitioner. For many years medical men have recognized the necessity of some control of marriage eventually being established. The recent action of the clergy connected with the Episcopal cathedral of Chicago, making a medical certificate of fitness for marriage prerequisite for the ceremony, shows to what extent public opinion has already advanced in seeking to control the marital contract.

The science of eugenics has grown up within a very short period of time and the average medical man, although vaguely aware of it, is not familiar with its scope or its accomplishments. According to its principal founder, Sir Francis Galton, it is "the science which deals with all influences that improve the inborn qualities of the race." With these influences the medical man will be expected to be familiar, and his advice will be sought in matters which undoubtedly are more important than those of life and death, controlling as they do the entire happiness of a lifetime for the interested individual and the physical, mental and moral well-being of unborn generations. On the single question of consanguinity, or more concretely of the marriage of cousins, medical opinion is entirely uncrystallized.

Questions of this sort are taken up in a scientific, unemotional manner by the author, and conclusions are reached, based upon the investigation of a large number of instances, in a perfectly careful and unbiased fashion. This is information medical men need and must have. The author concerns himself with the inheritance of family traits, embracing bodily conditions, pathological tendencies, mental and moral qualities. He also turns attention to the geographic distribution of such traits and the barriers interposed under certain circumstances to the diffusion of the race, and the consequent accentuation of inheritable characters, as, for instance, on isolated peninsulas and in island conditions. He discusses the influence of migrations and of immigration and its control. There is also a study of certain American families, with many other chapters on related subjects.

As indicating the importance of the study of eugenics, a bibliog-

raphy of twenty-five closely printed pages is a part of the book. A cavilling critic might easily find fault with some of the family records pertaining to mild grades of mental, nervous and other conditions, but with the general outlines of the case records and the deductions drawn from them no fault can be found. It appears to be the most available book for the progressive medical practitioner and for the medical man who has the least interest in sociological data.

THE CARE OF THE SKIN AND HAIR. By William Allen Pusey, A. M., M. D., Professor of Dermatology in the University of Illinois. New York. D. Appleton & Co. 1912. Price, \$1.00.

The reviewer confesses that after reading a chapter or two, he did not stop till he had read the entire book. It is the most common sense, practical and interesting dissertation on the care of the skin and hair we have ever seen, and this little book should be recommended to every adult patient, and especially to parents. Incidentally it is a book which the practitioner himself can read with benefit to himself.

After describing briefly the structures and nutrition of the skin, the author discourses on the care of the general health, diet and digestion in relation to the skin, then treats of the local care of the skin, water, bathing, soaps, physical methods, etc. Then follow chapters on the simplest diseases of the skin, such as chapping, sunburn, herpes, simple eczema, acne, warts, moles, freckles, etc., with concluding chapters on the hair, dryness, alopecia, grayness, superfluous hair, etc. The book will do a vast amount of good in teaching proper hygiene of the skin, also the prevention of baldness, and incidentally showing the ill results of self-prescribing. We most cordially endorse this book and congratulate the talented author for having succeeded in writing a popular work which is beyond criticism, and indeed meets "a long felt want."

DIAGNOSTIC METHODS. Chemical, Bacteriological and Microscopical.

A Text-Book for Students and Practitioners. By Ralph W. Webster, M. D., Ph. D., Assistant Professor of Pharmacological Therapeutics and Instructor in Medicine in Rush Medical College, University of Chicago; Director of Chicago Clinical Laboratory. Second Edition, Revised and Enlarged, With 37 Colored Plates and 164 Other Illustrations. Philadelphia. P. Blakiston's Son & Co., 1012 Walnut Street. 1912. Price, \$4.50.

This excellent book has been carefully revised, some parts rewritten, and much new matter has been added, such for instance as Kendall and Day's method of isolation of typhoid bacilli from feces, Neuberger

and Fisher's test for gastric carcinoma, the formalin method for ammonia in urine, Benedict's and Bang's tests for glucose in urine, and many others. The Wasserman test has also been gone into more thoroughly and other subjects enlarged. In fact we have carefully explored the contents and fail to find anything of scientific value that has been omitted. The book is well arranged, splendidly illustrated, and we unhesitatingly recommend this work to all students, practitioners and medical men in search of a competent authority and reliable guide in all clinical laboratory methods. It is one of the very best books on this subject in the English language, and represents an enormous amount of careful study, manifold experiments, and comprehensive knowledge of the literature.

THE CARE OF THE INSANE AND HOSPITAL MANAGEMENT. By Charles Whitney Page, M. D., Assistant Physician Hartford Retreat, Hartford, Conn., 1873 to 1888; Superintendent Connecticut Hospital for the Insane, Middletown, 1898 to 1901; Superintendent Danvers State Hospital, Danvers, Mass., 1888 to 1898 and 1903 to 1910. Boston. W. M. Leonard, Publisher. 1912. Price, \$1.00.

The title of this book is distinctly misleading. If it were "hospital management in the care of the insane" it would be very much more in keeping with the contents. Within this limitation the book is most admirable. It voices the ripe experience of one who has for many years intelligently and thoughtfully pursued the work of a superintendent in a hospital for the insane. The reader will find very little about the management of the patient, but a very great deal about the management of assistants, attendants, trustees, and the lay people who so often are put into positions of official control without the slightest knowledge on their part of the requirements of the offices they accept. The author is outspoken in his advocacy of the non-restraint management of insane patients, basing this term on the broad view of the English alienist Conolly.

The book should be placed in the hands of every medical officer who is engaged in this line of work, should be given to every executive official who has any relation to hospitals for the insane, and every trustee, present or prospective, should be compelled to read it.

CYCLOPEDIA OF AMERICAN MEDICAL BIOGRAPHY. By Howard A. Kelly, M. D., Professor of Gynecologic Surgery at Johns Hopkins University, Baltimore. Two octavo volumes averaging 525 pages each, with portraits. Philadelphia and London. W. B. Saunders

Company. 1912. Per set, Cloth, \$10.00 net; Half Morocco, \$13.00 net.

We know that anything which bears the stamp of Howard A. Kelly is first class, the best of its kind. Consequently, we find this cyclopedia a most excellent and reliable biography of the deceased workers in the broad field of medicine and surgery from the years 1610 to 1910—the only complete work of its kind. Dr. Kelly, as usual, has rendered a signal service to mankind and the profession in general by doing justice to the pioneers and in fact giving us thereby a history of medicine for the past three hundred years. This work is in two volumes of about 500 pages each, alphabetically arranged. Some names have been omitted which we expect to see in the next edition, and an index would be of great service, which also, no doubt, will be supplied in the future. We again express our admiration and appreciation of this work and trust it will find a grateful recognition by the profession generally.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M. D., at Mercy Hospital, Chicago. Volume I, Number II. Octavo of 291 pages, illustrated. Philadelphia and London. W. B. Saunders Company. 1912. Published Bi-Monthly. Price per year, Paper, \$8.00; Cloth, \$12.00.

This number of Dr. Murphy's Clinics is full of interesting material, well illustrated. It has evidently been edited a little more carefully than was the first number, which bore marks of haste in its preparation. It includes the following chapters: Ununited Fracture of the Tibia, Charcot's Ankle-Joint, Ununited Fracture of the Neck of the Femur, Arthritis of the Knee-Joint, Pelvic Tumor, Ununited Fracture of the Humerus (Transplantation of Bone), Lengthening of the Tendo Achillis, Inoperable Sarcoma of the Face (Salvarsan), Cutaneous Syphilis (Salvarsan), Gastric Ulcer, Ankylosis of the Knee, Volkmann's Contracture, Ankylosis of the Hip, Prolapsus Recti, Exploratory Laparotomy, Plastic Operation on the Face, Cyst in the Left Iliac Fossa, Trauma of Cystadenoma of the Breast, Anastomosis of the External Popliteal Nerve.

MODERN METHODS IN NURSING. By Georgiana J. Sanders, Formerly Superintendent of Nurses at the Massachusetts General Hospital, Boston. 12mo. of 881 pages, with 228 illustrations. Philadelphia and London. W. B. Saunders Company. 1912. Cloth, \$2.50 net.

We cordially recommend this book on nursing as one of the best

ones published. It is brought right up to date and gives the very best teachings current at such institutions as the Massachusetts General Hospital, Johns Hopkins Hospital, etc. It covers the modern curriculum of study and correctly teaches elementary bacteriology, the principles of nursing, and the basis of surgical technic. We find in addition to the usual chapters on the practical art of nursing, chapters devoted to medicines, poisons and antidotes, nursing in emergencies and accidents, food and its preparations, diets and dieting, and finally a number of valuable recipes. The numerous illustrations are effective and aid much in elucidating the text. We cordially commend this book.

HOME NURSE'S HANDBOOK OF PRACTICAL NURSING. A Manual for use in Home Nursing Classes, in Young Women's Christian Associations, in Schools for Girls and Young Women, and a working text-book for mothers, "practical" nurses, trained attendants, and all who have the responsibility of the home care of the sick. By Charlotte A. Aikens, Author of "Hospital Management," "Hospital Training-School Methods," "Primary Studies for Nurses," "Clinical Studies for Nurses." 12mo. of 276 pages, illustrated. Philadelphia and London. W. B. Saunders Company. 1912. Cloth, \$1.50 net.

This excellent book teaches primarily home-nursing in contradistinction to hospital practice. It covers the ground between the highly trained nurse and the practical attendant or the intelligent mother who by force of circumstances has to do her own nursing. Special instruction is given therefore in the nursing and care of babies. We find this a most practical book for the home, covering the personal care and needs of the invalid, the feeding of the sick, home treatment, care of the bottle-fed baby, maternity nursing, accident and emergencies, with instruction in invalid cookery and selected recipes. This book is sure to attain well deserved popularity.

THE IMMEDIATE CARE OF THE INJURED. By Albert S. Morrow, M. D., Adjunct Professor of Surgery in the New York Polyclinic. Second Edition, Revised. Octavo of 354 pages, with 242 illustrations. Philadelphia and London. W. B. Saunders Company. 1912. Cloth, \$2.50 net.

This is a very able handbook on the "First Aid treatment of the injured. Rather too extensive and comprehensive for general family use, but most excellent for students, nurses, hospital employes, missionaries, and intelligent laymen in charge of large bodies of men, etc. The book is well illustrated to make the text easily understood,

particularly the chapter on bandages and slings. Part I treats of the anatomy and physiology of the human body. Part II treats of bandages, dressings, practical remedies, etc., and Part III of accidents and emergencies. The author specially emphasizes the fact that this book is not intended to supplant the surgeon, but simply a guide in emergencies till the arrival of competent medical help.

TUMORS OF THE JAWS. By Charles L. Scudder, M. D., Surgeon to the Massachusetts General Hospital. Octavo of 391 pages, with 353 illustrations, 6 in colors. Philadelphia and London. W. B. Saunders Company. 1912. Cloth, \$6.00 net; half morocco, \$7.50 net.

This is a classical work on tumors of the jaws and will at once be accepted as an authority on this subject. The talented author has given us a masterly exposition of the new growths of the jaw, to assist the medical man in both diagnosis and treatment, aided by a splendid series of pictures and illustrations, case histories, etc. As the author well states, "it is true of jaw growths, as of gastric diseases, the terminal conditions of malignancy are easy to recognize, early malignant diseases are difficult to diagnosticate, and such early diagnosis offers the only effective means of treatment." The material for the chapter on leontiasis ossea has been furnished largely by Dr. A. B. Kanavel of Chicago. We repeat this book is an honor to American surgery and should be consulted by all those engaged in this class of work.

DISEASES OF THE GENITO-URINARY ORGANS AND THE KIDNEY. By Robert H. Greene, M. D., Professor of Genito-Urinary Surgery at the Fordham University, New York, and Harlow Brooks, M. D., Assistant Professor of Clinical Medicine, University and Bellevue Medical College. Third Revised Edition. Octavo of 639 pages, 339 illustrations. Philadelphia and London. W. B. Saunders Company. 1912. Cloth, \$5.00 net; half morocco, \$6.50 net.

It is a pleasure to review such high class books as the one before us, which has not reached its third edition, with more to follow. The book represents the thorough knowledge and broad experience of its able authors, and is therefore both authoritative and eminently practical throughout. Being the joint product of both a surgeon and a physician, both the medical and surgical aspects of the subject are equally well handled. The book has been thoroughly revised and much new matter added, but only such as has stood the test of clinical investigation by the authors and proven to be of value. No one practicing genito-urinary medicine or surgery can afford to be without a copy of this most valuable guide. Mention should also be made of the many excellent illustrations in color and otherwise.

DIFFERENTIAL DIAGNOSIS. Presented through an Analysis of 385 cases. By Richard C. Cabot, M. D., Assistant Professor of Clinical Medicine, Harvard Medical School. Second edition. Octavo of 764 pages, illustrated. Philadelphia and London. W. B. Saunders Company. 1912. Cloth, \$5.50 net.

We can only reaffirm the favorable opinion we advanced in reviewing the first edition of this book. We know of no better test of one's diagnostic ability than to read and study each case carefully and then follow the discussion and the reasons for the diagnosis made. Some errors have been corrected in this edition and a few new cases have been added. We are also glad to learn that the author is preparing a companion volume on the same lines, which will treat of symptoms which do not appear in this volume, such as hematuria, diarrhea, dyspepsia, edema, etc. We know of no better investment of one's time and money than to get a copy of this book and study one case each day. It will take about a year to finish this volume at that rate, but we can assure the reader that he will be a better diagnostician and take more pleasure in the practice of medicine than ever before.

PRACTICAL ANATOMY. The Student's Dissecting Manual. By F. G. Parsons, F. R. C. S., Eng. Lecturer on Anatomy at St. Thomas' Hospital and at the London School of Medicine for Women; Examiner for the Fellowship of the Royal College of Surgeons of England, etc., and William Wright, M. B., D. Sc., F. R. C. S., Eng., Lecturer on Anatomy at the London Hospital; Examiner at the Royal College of Surgeons of England, and at the Universities of London and Bristol. In Two Volumes. New York: Longmans, Green & Co. 1912. Price, \$2.40 net.

We find much to admire and very little to criticize in the volume before us. The idea is to teach the student anatomy in a practical way, by most careful attention to dissecting, and the positions and relations of structures of importance. Copious illustrations throughout the books are of great value and we have no doubt students will rapidly appreciate the very great help these authors have given them in mastering the complex subject of anatomy.

Volume I deals with the anatomy of the head and neck and lower extremity. Volume II takes in the thorax, abdomen, pelvis, and upper extremity.

SYNDICALISM AND LABOR. Notes Upon some Aspects of Social and Industrial Questions of the Day. By Sir Arthur Clay, Bart. New York: E. P. Dutton & Company. 1911.

A timely and efficient dissertation on "Syndicalism," by which is understood the destruction by force of existent organization, and the transfer of capital from its present owners to the Trade Unions. The "general strike" is the means to this end. As the author well states, social and industrial movements of far-reaching importance are now in progress, and what they portend no living man can say. The object then of this book is to describe the doctrine of syndicalism; its intellectual aspect; syndicalism in France; the recent French railway strike; the Swedish strike of 1909; syndicalism in Italy, Spain and England; syndicalism, collectivism and trade unionism in general; syndicalism in practice; and the apathy of the middle and upper classes in the presence of this danger that threatens them. The author writes in a temperate style, handles the subject thoroughly, and we trust all our readers will secure a copy of this book and become convinced with him that "all social advance must be in conformity with the laws, immutable, irresistible and eternal which condition human existence."

THE COLLECTED WORKS OF CHRISTIAN FENGER, M. D. Edited by Ludvig Hektoen, M. D., Professor of Pathology at Rush Medical College. Two octavo volumes averaging 525 pages each, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Per set: Cloth, \$15.00 net; half morocco, \$18.00 net.

It is with reverence that we express our deep appreciation of the collected works of Christian Fenger. No greater tribute could have been rendered to this great and wonderful man than by this publication, issued under authority of the Directors of the Fenger Memorial Association. Dr. Coleman G. Buford collected the material and Dr. Ludwig Hektoen has acted as editor. The two volumes contain practically all of Fenger's writings, and his numerous students and colleagues will be grateful to the association for enabling them to secure them in this way.

News Items

Wanted.—Young medical student or doctor to correspond with us about a new way of money and friends making in the health and efficiency promoting line. Address Geo. A. Schmidt (IT) Co., 236-238 North avenue, Chicago. Established 1875.

Personal.—Dr. G. W. Wagner has left the city for an extended trip in northern Wisconsin. He will spend several weeks on this combined business and pleasure trip.

Announcement.—Dr. J. L. Van Valkenburg is now prepared to give gas-oxygen anesthesia. His office will be at the disposal of those wishing to do minor surgery, or if so desired, the apparatus will be brought to the surgeon's office. Suite 1305, Heyworth building. Hours 8:30 to 6:30.

Removal Notices.—Dr. Henry T. Byford has removed his office to the Peoples Gas building, 122 South Michigan avenue.

Dr. Frederick G. Harris has removed his office from 407 Schiller building to suite 925 Monroe building, 104 South Michigan avenue. Telephone, Randolph 5931.

Dr. Richard J. Tivnen announces the removal of his office to Suite 800, Monroe building. Office hours, 10 to 2, and by appointment. Telephone, Randolph 1622.

Dr. Maximilian Herzog has moved his laboratory from the Schiller building to Suite 1604 Mallery building, southeast corner of Wabash avenue and Madison street.

Dr. L. A. Greensfelder has removed his office to the Monroe building, 104 South Michigan avenue.

Dr. Sanger Brown has moved his office from 32 North State street to the new Mallery building.

Dr. Charles P. Pinckard has moved his office to the Monroe building, 104 South Michigan avenue. Hours, 11 to 3.

Dr. H. C. Will announces the removal of his office from 1206 Tacoma building to 806 Otis building. Telephone, Main 2310.

Election of Officers, Chicago Medico-Legal Society.—The annual meeting of the Chicago Medico-Legal Society, held June 1, 1912, resulted in the election of Dr. E. J. Doering, president; Dr. Henry T. Byford, first vice-president, and Dr. Carl Wagner, second vice-president; Dr. Joseph Matteson, treasurer; Dr. Wm. L. Baum, secretary.

The next general meeting of this society will be held the third week in November next. Dr. Wm. L. Baum, Dean Walter T. Sumner and Dr. L. E. Schmidt will be among the speakers selected for this occasion.

Annual Meeting of the Association of the Medical Reserve Corps.—At the annual meeting of the Association of the Medical Reserve Corps, U. S. Army, Illinois Division, the following officers were elected, viz.: First Lieutenant E. J. Doering, president; First Lieutenant Samuel C. Stanton, vice-president; First Lieutenant John Allen Hornsby, secretary

and treasurer; First Lieutenants Jacob Frank and Thomas J. Sullivan were elected councillors, vice First Lieutenants D. A. K. Steele and A. E. Halstead, whose terms expired. Colonel J. M. Bannister of the U. S. Army, delivered the address of the evening on the "Duties of Medical Officers in the Field." A vote of thanks was extended to Col. J. M. Bannister for his splendid address and also to the retiring President Frank Billings.

A Laboratory of Child Study.—A privately founded laboratory for child study has been opened in the Peoples Gas building, Suite 1412. It will be available by appointment for the application of scientific principles to the measurement of the physical and mental condition of the child. This laboratory does not comprehend the treatment of disease, only recommendations for developing to an ideal the physical and correlated mental or psychic side of children. Physicians sending children for such examination will be furnished duplicate reports showing ratios of development of the whole body regionally so as to indicate at a glance whether or not for any part of their body they are abnormally developed for their years, race, sex and for their social status. Recommendations for symmetrical growth and development will be outlined.

Dr. MacMillan, who is in charge of the child study department of the Chicago Board of Education and who assisted and followed Dr. Christopher in this work, will supervise this laboratory, devoting time outside of Board of Education duties for that purpose. Adequate assistants will be employed to carry out the work in all details. Some of the manifest defects amenable to correction are symmetrical physical growth, unbalanced mental development, defects of speech, delayed maturation and pronounced precocity.

Appointments may be made by telephone or by post at any time. Telephone, Randolph 4893. The laboratory has been financed for a year and it is hoped that the demand will justify its existence and its continuance.

Chicago Medical Directory.—The new edition of the Chicago Medical Directory, so well known that it is familiarly called "The Blue Book," is to appear early in July. The 1912 edition will again contain the street list of physicians and druggists, as there has been a general demand that this be resumed. The Directory of Physicians has been enlarged and now includes Cook county.

These changes add much to the value of the directory and no physician can well afford to be without a copy. The subscription price is \$2.50 with a discount of 50 cents where cash accompanies the order.

Remember this edition will contain a list of medical societies, together with their officers, a list of hospitals and sanitariums with their medical staffs, etc., a list of medical schools and colleges, an alphabetical list of physicians of Cook county, also an alphabetical list of druggists of Cook county, and the Medical Fee Bill, also the reincorporation of the Physicians' and Druggists' Street Directory.

Send orders to McDonough & Co., 154 West Randolph street, Bank floor, Chicago. Telephone, Franklin 126.

New Book on Pellagra.—The C. V. Mosby Medical Book and Publishing Company have just published Roberts' Pellagra. They announce that this will be the most exhaustive, the most practical, the best illustrated and the most up-to-date book on this subject that has been issued in any language.

Surgery from the Viewpoint of British Practitioners.—Funk & Wagnalls Company have secured the American rights to "A System of Surgery," edited by C. C. Choyce, dean of, and teacher of Operative Surgery in the London School of Clinical Medicine (post-graduate), etc. J. Martin Beattie, professor of Pathology and Bacteriology and dean of the faculty of medicine in the University of Sheffield, is the Pathological editor of this important new work. Volume I will be ready about the middle of April and the remaining two volumes will be published about autumn, 1912. The price of the work will be \$21.00 per set.

Child Study in Semi-Popular Form.—"The great importance of letting nothing interfere with early attention to speech defects and other deviations from the normal ought to be very widely urged."

This is brought to our attention in the most startling manner in an article upon the subject, "The Child That Is Different," by Rheta Childe Dorr in the April number of *The Century Magazine*. When the statement is made that fully one-third of all the children in the primary or grammar schools are physically or mentally incapacitated, it is time for parents to sit up and take notice. These children, approximately one-third of all the children under fourteen years of age, can not keep up with the ordinary school curriculum devised to meet the needs of perfectly healthy, normal, average youngsters. The consequence of this, of course, is that the whole school system is impeded. It means that the one-third not only lag but act as a drag upon the remaining two-thirds.

It would be of immense benefit to the coming generation if a copy of this article could be placed in the hands of every physician, of every teacher, of everyone in fact brought in contact with the growing child, for their careful study and reflection.

THE CHICAGO MEDICAL RECORDER

JULY, 1912.

Original Articles.

SOME SEVENTEENTH CENTURY OBSTETRICIANS AND THEIR BOOKS.*

By WALTER H. ALLPORT, M. D.

Jane Sharp; *The Compleat Midwife's Companion; or the Art of Midwifry improv'd.* 4th Ed. 8°. London, 1725.

Justine Siegemundin (geb. Dittrichin); *Die Chur-Brandenburgische Hoff-Wehe-Mutter, das. ist: ein höchst-nöthigen Unterricht von schweren und unrechtstehenden Geburten. U. Liebperten.* Cöln-an-der-Spree, 1690.

Francois Mauriceau; *Traité des maladies des femmes grosses, et de celles qui sont accouchées.* 7th edition, Paris, 1740. 4°.

Francois Mauriceau; *The diagnosis of Women with child and in childbed,* etc. Translated by Hugh Chamberlen. London, A. Bell, 1710. 8vo.

Francesco Mauriceau; *Von den Zufällen und Krankheiten der schwangern Weiber und Kindbetterinnen.* 1680.

Elizabeth Nihell; *A treatise on the art of Midwifery. Setting forth various abuses, etc.* 8°. London, 1760. Also in French. Paris, 1771.

P. Hecquet; *De l'indécence aux hommes d'accoucher les femmes, etc.* Paris, 12°, 1708.

Hebammen Unterricht; *Nothwendig und nützlicher Unterricht, wornach sich die in das durchlauchtigsten Fürsten und Herrn, Herrn Bernhards, Herzogen zu Sachsen-Landen bestellten Hebammen . . . richten and halten sollen.* 4°. Meiningen, 1682.

Cornelius Solingen; *Handgriffe der Wund-Artzney, nebst dem Ampt und Pflicht der Weh-Mutter.* Andere Auflage. 4°. Wittenberg, 1712.

Sommern (J. G.); *Nothwendiger Hebammen-Unterricht.* 18°. Jena, 1676.

Paul Portal; *La Pratique des accouchements.* Paris, G. Martin, 1685. 12mo.

Gottfried Welsch; *Kindermutter oder Hebammenbuch.* 8vo. Leipzig, 1651.

I.

A modern imagination pictures to itself but with difficulty the status of the obstetrical art of the seventeenth century. Fancy a world into which Leeuwenhoeck (1632-1723), had not yet brought the

*By courtesy of the *American Journal of Obstetrics.*

revelations of the microscope; where Harvey had but just made the discovery (1628) of the circulation; in which the obstetrician had never heard of Laennec and his stethoscope (1819), or of those foetal heart sounds which that instrument alone has drawn within the compass of his ear; into which the Chamberlens and the secret of their forceps have still fifty years to come, with Simpson (1847), and Semmelweiss and Lister still more than two centuries away. Imagine a lying-in chamber which the physician enters either not at all, or heavily veiled and often at the peril of his life; in which the Caesarian operation is only undertaken on the dying or dead mother, and where parturient women perish undelivered after labors lasting from three to ten days.

The picture of such a period can be compared but to that of a physical universe just emerging from a glacial epoch, with only a few peaks yet uncovered and all the rich scientific landscape and pasturage, so familiar to modern eyes, still buried amidst the mass of conjectural ignorance and superstition which then passed for knowledge.

If those old fathers and mothers of obstetrics, to whose writings this essay is an insufficient tribute, are to be judged by modern standards of science or language or thought, they are by turns funny and pathetic, archaic, priest-ridden, futile and dogmatic; yet if we think of them as real men and women fighting their way to real knowledge with insufficient weapons and through an uncertain light we find them often measuring well up to our best present day standards either professional or humanistic. We have but to remember that the correct thinker survives his age by virtue of a mind instinctively accepting fundamental truth and discarding error; this correctness of vision is, at bottom, a matter of personal and habitual independence of mental process and of correct development of the logical faculty; individuals thus fortunately equipped engage in original thought despite all handicaps, and furnish to each age its fund of imperishable ideas. In the ancient world Hippocrates and Aristotle were such original thinkers. Galen and Pliny were ephemerals whose mental processes followed conventional lines—a pair of gullible old women whose ingenious romanticism is only equalled by the quality of the fables which they themselves believed. Of those writers whom we shall presently consider, Mauriceau, the Chamberlens, Justine Siegemundin and Cornelius Solingen were original thinkers and thought with Aristotle; Scipio Mercurio, Jane Sharp and Elizabeth Nihell—yes, and perhaps Louise Bourgeois—were, like Galen and Pliny, mere gleaners in the scientific

field, picking up grain and chaff alike, without much thought of the actual value of their gatherings.

It is no new idea that with the discovery of the art of printing the night of the dark ages melted away almost within a generation. Yet it is interesting to notice anew in these old books the avidity with which the human mind reaches out for knowledge when effort is all that is necessary to bring knowledge within reach. To learn, to compare, to judge of error, are normal functions, and normally in operation when the individual is unhampered by fear or tradition, or by prejudice under the cloak of religion. With knowledge once available to the ordinary man through type, restrictions of geography and language become inadequate to hold back his effort to acquire it, and he uses it, later on, as material with which to enrich his own thought and that of his friend and pupil. He travels, brings back foreign books, translates and prints them, and science becomes for the first time since the tower of Babel a universal brotherhood which knows no race or strange tongue. Not only is this true, but each generation, instead of starting *ab initio* to think out its own science with what little assistance tradition and manuscript can give it, is now enabled to stand on the shoulders of its ancestors whilst reaching a little farther into the firmament of knowledge.

Most of the old books on which this essay is founded were immediately translated into other languages. They furnish still lively examples of the eagerness with which the hungry and just awakened mediaeval world took advantage of the discovery of the art of printing to burst asunder the barriers which religion and language and geography and the span of human life, and the hitherto imperfect media of thought transmission had raised to curb the appetite for knowledge.

Gottfried Welsch, Doctor of Medicine and Philosophy, and Professor and Assessor of the Medical Faculty of the University of Leipsic, translated into "Hochdeutsch" the Italian *Commare del Scipione Mercurio on Obstetrics*, the French tractate* of Severinus Pinaeus on Embryology, the French treatises and memoirs of Louise Bourgeois, and published them with his own commentaries in 1652, in one enormous "Hebammenbuch" of nearly 2,000 octavo pages.

The German Chur-Brandenburgische Hoff-Wehe-Mutter of Justine Siegemundin, dated Berlin 1690, was immediately translated—as it deserved to be—into Dutch by Cornelius Solingen, as well as into several other languages.

*The old word; the word *essay* originated with Francis Bacon.

The Dutch *Hand-Griffe der Wundartznei, nebst Embryulcia, und dem Ampt und Pflicht des Wehemutter's* by Doctor Cornelius Solingen, of the Haag, was translated in 1712 into German by an anonymous "Wohlhaber der Wundartznei," and published by Gottfried Zimmermann of Wittenburg.



First Title Page; Gottfried Welsch; Hebammenbuch. No Date; See Plate 2.

The French "Disease of Women with Child, and in Childbed," by Francis Mauriceau, was translated into English in 1672 by no less an obstetrician than Hugh Chamberlen. It was also translated into German.

Sommern in 1676 translated into German a Swedish treatise on scurvy.

The English Treatise on the Art of Midwifery by Elizabeth Nihell (1760) received not only its primary inspiration from a French book, but when rendered from English back into French was eagerly read by French midwives.



Gottfried Welsch. Second Title Page. 1652.

The writings of Louise Bourgeois were rendered into English quite as early as into German. Included in the only edition (third, 1663) of "The Compleat Midwife's Practice" to be found in the

library of the British Museum, "with Cutts in Brass," is an anonymous translation of the "Instructions to Her Daughter."

These are but a few instances of the early use which men made of the printing press to convert one branch of the art of medicine from a series of narrow systems of local traditions and experiences into a genuine science of universal application.

Although Ambroise Pare (1562), something over a century after the discovery of printing, published the volume which served as the germinal spot for all modern obstetrical books, it was only after another half century that modern obstetrics really found its voice. And what curious uncertain voices come to us from those early printed pages! Not at all like the guarded utterances of our modern frock-coated professors, whose sentences march in solemn impersonality across an annotated page. These old fellows have no formal style, no dignity, small respect for the truth, and their thoughts come tumbling out with as little regard for sequence as have the types on the same pages for alignment or uniformity. They never hesitate to smite each other vigorously and viciously, tell the intimate obstetrical history of their own families unblushingly, give us their patients' names and street addresses, and fill their pages with a heterogeneous mass of rubbish, superstition, tradition, speculation and error, that should have perished in the telling without being indiscreetly perpetuated in black letter by the *furor scribendus* of the seventeenth century. And such error dies hard, even when put into cold type. To be sure, in one sense the surest way to kill an error is to print it, for the act of printing presupposes publicity, and a multiplicity of intelligent critics will kill error sooner or later every time. But in another more literal sense the error and its record die only with the printed page, and once there the Index Expurgatorius but excites our curiosity, and the public *auto da fe* only makes us long for copies which may have escaped the flames which consumed the balance of the edition.

But, after all, the best record of progress is comparison, and to-day we have to thank these old books and their writers more for their record of error than of truth, for the truth we know; the error we might have forgotten but for the record. And how else, then, could we congratulate ourselves on the abysses of ignorance and superstition from which we have only just escaped? Yet future generations—sad after-thought—may presently be saying the same things of us, and thanking some of us, who shall be nameless, for thinking in good loud type not wisely but too well.

II.

Although these fragmentary memoranda have introduced themselves to the world as an obstetrical essay it would hardly be human, in the presence of this group of very curious and distinguished old books, to refrain from some sort of commentary on their physical attributes, irrespective of the thought carried by their pages. What of their paper, binding, print, of the language in which their thought is set forth? One might write a volume in itself in answer to each of these questions, and each chapter would be a "tractate" on the status of book binding, printing, and language in the seventeenth and eighteenth centuries.

Paper: The age of parchment and vellum—except for bindings—has passed on; the printed page is a paper one, but the paper is uncalendered, of rough fiber, yellow or brown, poorly bleached, of varying thickness, and not yet either water-marked or lined with the mesh of the cloth or wire between layers of which the modern paper-maker squeezes out his pulp. In one of these old books (1693) I found a transitional word which tells the story of the paper, *papeyr*, the ancestral word for *papier* and *paper*; and in that word and the coarse mixed *papeyr* upon which it was printed my mind's eye saw, not so very far away, the Nile and its waving bulrushes and an old Egyptian writing on a leaf of papyrus.*

Binding and Bookmaking: The earlier books of this group, in German, are bound in thick parchment or pigskin; the later ones, in French and English, in leather. The volumes are not of standard sizes like the modern quartos or octavos, for the bookmaker cut his pages to suit his own fancy and sometimes even changed his gauge in the middle of a book. The books are often nearly as thick as they are deep. The binder's art had not gone far enough in the early half of the seventeenth century to print or stamp or tool the bindings. For example, the volume collected and annotated by Gottfried Welsch is a clumsy, thick, irregular octavo bound in heavy pigskin, back gone, and sides cut into by a vandal's knife, the cover still showing some traces of colored *hand* illumination and text. Under the warped and incised pigskin can be seen the pasted sheets of waste printed paper out of which the old bookbinder made his *pasteboard*. The book was issued in parts, each with a different date and imprint, and each with an elaborately engraved and symbolic title-page.

Cornelius Solingen—translated into German by an anonymous

*The ancestry of modern paper, by the way, does not follow the etymology; our paper goes back to the *pulp* process of India and China.

Liebhaver der Wund-Artznei; second edition, Wittenberg, bey Gottfried Zimmermann, 1712; 7 inches x 9 inches x 2.5 inches—is bound in thick parchment, folded in at the corners, that rattles when the book is opened; the title is written on the back in script. A wonderfully engraved frontispiece gives us a bird's-eye view of God, Adam and Eve, a serpent swallowing his tail, a landscape with fuzzy trees like wigs, and a set of surgical instruments spread out on a lawn. At the back of the book are numerous plates showing surgical instru-



Justine Siegemundin; from Delacoux' *Sage-femmes Célèbres*.

ments massive and indestructible enough to have lasted till the present day.

Justine Siegemundin's must have been a beautiful book in its prime, Berlin, 1690, if the present binding was the one in which it was originally published. Probably it was, for Justine was proud of her book, and at her own expense had the "*Kupffers*," which illustrate it so elegantly, cut or etched in Holland, at the Haag, by Reg-

nerus de Graaff. The first page is a beautifully engraved plate showing a garland of four children and a medallion head encircling a motto:



Justine Siegemundin; Title Page; 1690.

“An Gottes Hilff und Segen
 Geschickten Hand bewegen
 Ist all mein Kühn gelegen.”

The medical and theological soundness of the matter, is communicated in a lively dialogue by Justina to Christina, attested by certificates from the medical faculty of the University of Frankfort an der Oder, and from the official preachers of the court of Berlin.

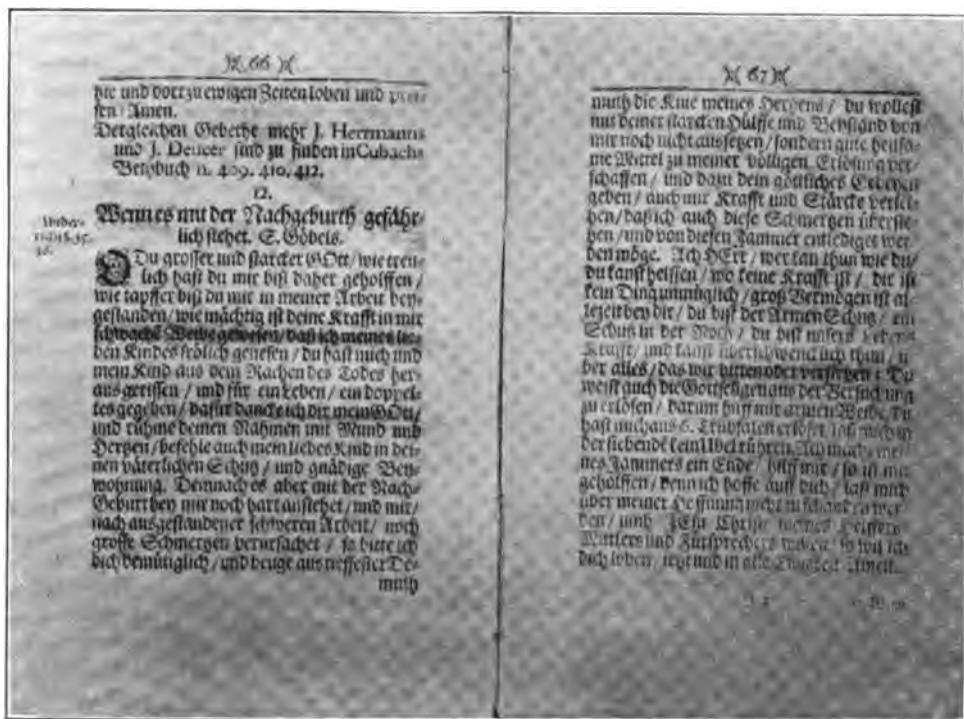
The book is about 7 inches x 10 inches x 1.5 inches, printed in exquisitely clear Gothic blackletter of varying size, on fine nearly white paper showing the wire mark but without water-mark, with faded gilt edges, and bound in soft grained brown calf leather with a tooled border terminating in each corner with the puffy gold and velvet crown of the Churfürsts of Brandenburg. The esteem in which Siegemundin was held by her generation is shown by the fact that her book was translated into Dutch by Cornelius Solingen.

A thin unbound large-octavo, brown-paper pamphlet published in two parts at Meiningen in 1682 contains in Part I, "Nothwendig und nutzlichen Hebammen Unterrichten des Herrn Bernhard's Landen." In Part II are certain, "Geistlichen Unterrichten"—prayers, psalms, meditations, proverbs, and forms of baptism to be used by midwives. A very beautiful example of clear, large, gothic black letter printing, with marginal headings and fancy initials. This old pamphlet is of great interest in its disclosure of the contemporary attitude of the community toward the midwife. She is admonished as to her conduct toward the state, toward patients, "medicos" and rivals, toward unmarried patients; to be found always at home; to keep her mouth shut; to take only what her patients can afford to pay; to abstain from "*Vollsaufen und Hurerei*"; to keep herself clean and her finger nails cut short; to engage in daily prayer of a prescribed form; and to have in readiness a goodly number of prayers for the various obstetric emergencies. These prayers, some in rhyme, are printed in full, together with many appropriate texts, psalms, etc. A separate prayer is offered for each emergency—such as delayed labor, twins, one twin dead, malformation, malpositions, cord prolapsed, arm prolapsed, retained placenta, etc., as well as a prayer of thanks for a happy delivery. The pamphlet reveals the deeply religious spirit with which the life of the German community was at that time saturated. The style of the anonymous writer is direct, simple and forceful, and the pamphlet must have exerted a strongly elevating influence over the midwives for whose instruction it was prepared.

Contrast this with the *Hebammenbuch* by Johann Georges Sommer, of Arnstadt in Schwartzburg, published Jehna, 1676, bound in tough pigskin and, though hardly 3 inches x 5 inches, containing over five hundred pages of thick brown paper, bearing the imprint of a

rough irregular old German type in atrocious ink. This clumsy little book has probably kept its original shape and condition because very few dead "Hebammen" ever cared to risk their eyesight trying to read it. Quite as much may be said of the typography of several parts of Gottfried Welsch.

And this brings us to another point of interest. Many of these old books are made up of several parts printed at different times and by different printers. For example, the Sommern contains Hebam-



A Prayer for a Troublesome Placenta. From *Nothwendig und nützlicher Unterricht für Hebammen*. Meiningen, 1682.

men Unterrichten, 1676; Christlichen Kinder Zucht, 1676; Weiber und Kinder Pfleg-Buchlein, 1676; and Bericht von Scharbock,* from the Swedish, 1675. The type of these different tractates is so unlike that we must conclude they were printed at different offices from separate fonts and brought together only for binding.

The best examples of varying excellence of typography is to be

*Scurvy, see post.

heavy black letters, with well drawn "coppers" executed by J. T. de Bry. This translation was printed by Fievet for Merian at Franckfort in 1648. Then two more translations from Louisa Bourgeois—the Schützrede (1629), and the Secrets (1644), very indifferently printed for and published by Merian, which end the volume. Several



Louise Bourgeois; Title Page to Part Second. Bound with Gottfried Welsch; 1628.

of the many title pages bound with this book are beautifully engraved, but many of the Italian illustrations, which Welsch tells us he has "Wohlbedächtigt geendert, um das was ärgerliche Augen ärgeren möchte verdecken lassen," have been unfortunately abstracted. The reader may not be unnecessarily reminded that the various writings reproduced in this book received their original publication during a

period covering almost exactly that of the Thirty Years' War (1618-1648), and that the book was finally completed and issued almost coincidentally with the treaty of Westphalia.

Girolamo Mercurio,* called Scipio, was born in Rome in 1550 and died—somewhere in Italy—in 1615; he was therefore almost a contemporary of Pare although he does not seem to have been familiar with his teachings.* His books were well illustrated, and the esteem in which he was held is shown by the fact that his *Commare*, which was published in Verona in 1600, was republished in Venice in 1601 and six times more in Italy before 1676, and was translated twice into German. His book is a curious mixture of current gossip, mysticism, superstition, and glimpses of real truth, for all but the last of which his ecclesiastical training and the *zeitgeist* are of course responsible. He says nothing original, rambles off into theology on small provocation and has a dogma or a quotation to meet every emergency. As a compiler he gives an invaluable picture of the obstetrical traditions of his own and preceding periods. He is the obstetrical Pliny of the middle ages, but to Pliny's insatiable appetite for legend he adds a capacity for theological obstetrics altogether his own. His explanation of the method by which impregnation may occur through the Evil One, even though that very active individual is conceded to lack corporeal attributes, is a triumph of constructive demonology.

Here are four curious old books from French and English presses.

Diseases of Women with Child, and in Childbed, as also the Best Means of helping them in Natural and Unnatural Labors; Written in French by Francis Mauriceau, and translated by Hugh Chamberlen.

*He studied in Bologna and Padua, and at Milan took the habit of the Dominicans. Theology shaded off imperceptibly into medicine in those days, and in order to practice medicine without interference he took a not unnecessary course in dogma at Padua. Like most Italian professional men and craftsmen of the period, he was a great wanderer and found his way to France and Germany in 1571, attaching himself under the name of Scipio to the company of mercenaries under Jerome de Lodrone. At that time he relinquished his order but, unlike his roving countryman of the same period, Benvenuto Cellini (1500-1571), his life was irreproachable. Returning to Italy in 1573, he became widely known as a physician and enjoyed the friendship of the Pope and the nobility, living much of the time in Peschiera. In 1600 he resumed the Dominican habit. His knowledge of the classics was remarkable and he must have had access to vast libraries of ancient manuscripts, for his works are an inlay of quotations from older writings. His apology for writing his *Commare* in the Italian mother tongue instead of in Latin was that the midwives and gentry, for whom it was intended, could not read the latter language. Portal (*History of Anatomy*, II, 258), does him the injustice to describe his works as those of a charlatan; but his knowledge was quite abreast of the times, for the times were theological, classical, legendary, and altogether destitute of any true scientific spirit.

First edition London 1672. This copy is a fourth English edition dated London 1710. The original work was published in France in 1668, by gracious permission of the king, and bore the certificate of the noble personage to whom was farmed out the privilege of issuing copyrights and of attesting to the correctness of all works coming from the French presses. It is significant of the French



Louise Bourgeois; *Apologia*; 1629. Bound with Gottfried Welsch.

attitude towards matters religious that although a page is given to a certificate showing "The Approbation of the four Sworn Provosts and Wardens of the Master-Chirurgeons of Paris," no paper is wasted over the sentiments of the theological faculty toward the volume. The English translation reproduces all of the French "privileges," and is a long octavo well printed from good type on white paper

and bound in dark nicely tooled leather. In physical appearance this book is quite modern, with the exception of the eighteenth century type and the ancient capitalization and spelling. The Table of Contents is at the end of the book. Comments by Chamberlen, explanatory, exclamatory, derogatory, or sharply contradictory, are inserted in italics in the lateral margins. Some scientific gentleman has abstracted most of the plates with which the copy examined by



the writer was once enriched. There remain several good "coppers" illustrating a murderous looking "extractor" which was to be screwed into the infant's head. This was the celebrated *tire-tête*, invented by Mauriceau, and Chamberlen must have laughed in his sleeve when he reproduced the illustration for his English public. The less said about this aspect of the Chamberlen family the better; for there must have been something morally wrong with obstetricians who

would deliberately countenance the use by others of an infanticidal instrument like the *tire-tête*, whilst themselves employing secretly an instrument which they knew was capable of saving a large proportion of infant lives. In his translator's preface Hugh Chamberlen apologizes for not publishing to the world the secret of his own instrument (the forceps), on the ground that the secret was not his own but his family's, of which several members were still living.

A more ancient book, both in appearance, language and subject matter, is that of Jane Sharp.

The Compleat Midwife's Companion, or the Art of Midwifery improved. Directing Childbearing Women how to order themselves in their conception, breeding, bearing, and nursing of children. In six books and several chapters, with physical prescriptions for each disease incidental to the female sex, whether virgins, wives, or widows. First edition London 1671, 8vo, with plates. Many editions, of which this copy is a fourth, printed in 1725 without plates, but with a curious old frontispiece. The old binding has evidently been replaced by cloth boards during the last hundred years. The book is a small twelve-mo; the paper is poor; the alignment is bad; the type and ink are worse; the pages are irregular and poorly cut. The volume was evidently not meant for scholars or those accustomed to fine and expensive editions, in fact it must have been what its title announces—a book written by a midwife and intended to supply her uncultured sisterhood with a fund of useful knowledge, expressed in every-day vernacular, not available at that time in any other form. The writer states that she "has been at large expense translating books from French, Dutch, and Italian." Most of the names are capitalized, although this custom is but irregularly adhered to. The book contains neither Latin nor references, but is a wonderfully interesting mine not only of archaic nomenclature and phraseology but of the obstetrical customs and traditions of the common English people of the seventeenth century. To these features we will return later on.

And who, by the way, was this Jane Sharp—"Mrs. Jane Sharp, for forty years practitioner of midwifery," as the title page of her book tells us? And who wrote her book, if she didn't write it? To these questions we are constrained to answer after a faithful but fruitless search through libraries and encyclopedias—*dass weiss Gott allein!* Justine Siegemundin we know and love; Elizabeth Nihill we have encountered and cannot forget—and here are their faces to vouch for them. But as for Jane Sharp, the library of

the British Museum knows her not, except as the authoress of the above-mentioned treatise, which ran through several editions, all of which are scarce, badly worn, and more costly than diamonds. So far as biographical history or contemporary allusion has to say to the contrary she may be one of those literary moon-calves of which the English have been and are still so fond. J. Blunt was one, Junius



Jane Sharp; Frontispiece and Title Page; 4th Edition, 1725.

another, Veritas and Proprietas a third and fourth, and so on, each standing for an idea and each grinding anonymously his own pet axe. Maybe Jane was a medieval joke, and in some places she certainly "reads funny," but the English took themselves too seriously to joke about matters connected with the nation's future electors. Perhaps a final cryptogramic analysis may show that Bacon when he waxed tired of writing Shakespeare took up obstetrics *pour passer le*

temps; in fact, we might adduce, but for the timely pressure of other material, internal evidences of language, thought and important parallelisms in both works which give great weight to the contention that Bacon—in the absence of direct evidence to the contrary—must also accept the responsibility for the writings of Jane Sharp. Should such prove actually to have been the case, it is not difficult to believe that the great Elizabethan preferred to have this work published posthumously. The skeptical reader may be disposed to quote in connection with these speculations a certain comment of Cornelius Solingen—"das solches aber gewiss sey lass ich meine Gänse glauben."

Here is a French book containing two treatises.

"De l'indécence aux hommes d'accoucher les femmes. De l'obligation aux femmes de nourrir leur enfans." Paris 1708. Published anonymously, but probably by P. Hecquet.

This is a delightful little work, 3 inches x 7 inches, corresponding to our modern duodecimos, bound in brown calf, on fine paper, with clear open French type well set and elegantly aligned. The book is filled with classical and contemporary quotations; the references, of which there are many, are carried to the bottom of the page. The French is vigorous and modern and well up to the standard of elegance of the book-making, and the work is put out with the certified approval not only of the usual royal inspector, but of Bosquillon of the law faculty, and Geoffroy of the medical faculty of the University of Paris. In many ways the book reflects the elegant but degenerating France of those times quite as much as does that of Mauriceau, for not only did the language attain its complete crystallization during the reign of Louis XIV, but man midwifery—against which the book is a protest—was obtaining through the example of the French sovereign and his court a vigorous but hotly contested hold on the upper classes of society. If I mistake not, most of the facts, quotations, and arguments with which Elizabeth Nihill, who was trained at the Hotel Dieu, arraigned the accoucheurs of her own country were cribbed without acknowledgment from this little volume.

Half a century later, 1760, Elizabeth Nihell, Professed Midwife, published through A. Morley at the Gay's Head, London, "A Treatise on the Art of Midwifery." This is a modern-looking octavo, present copy probably rebound, unillustrated, printed on good paper in large clear type, and dedicated "To All Fathers, Mothers, and likely soon to be either." Within is "set forth the Various Abuses of the Art of the Midwife, especially as to the Practice with the Instruments, and serving to put all rational Inquirers in a fair way of very safely

forming their own judgment upon the Question: which is the best to employ, in cases of Pregnancy and Lying-in, a Man-midwife; or, a Midwife?" The book is divided into two parts. In part 1 she gives, through the medium of fourteen objections and answers, her somewhat heated views on the subject of Men-midwives. In Part 2, she gives us a series of "Observations on labor and delivery, including a description of the pretended necessity for the employment of in-



Elizabeth Nihell; from Delacoux' *Sage-femmes Célèbres*.

struments," and continued observations—by this time superheated—on the objectionable individuals discussed in Part 1. In fact, Delacoux calls her book "a treatise on obstetricians rather than obstetrics." Our remote and respected obstetrical forefathers—Hippocrates, Galen, Guillemeau, Dyonis, Bienassis are none too gently handled; but on her contemporaries—Mauriceau, Deventer, De La Motte, Palfin, Levret, Velsen, Roonhuysen, Vanderswam, the Chamberlens, Lowder, and all the others of the tribe of Pudentists and clandestine users of "that

infernally instrument" and its ancestors she lets herself loose. They are no better than itinerant corn cutters, bone setters, couchers of cataracts, and stone cutters. And on poor Smellie, her countryman and rival, "whose hand was large enough to clean out the crater of Vesuvius," and who taught obstetrics in six weeks to a gaping class of yokels for six and six apiece through the medium of a hollow manniken tenanted by a bladder distended with small beer, she descends like an avenging fury. She jeers at the anatomists for believing the story of the Rabbit-woman of Godalmin, and solemnly accuses Ambroise Pare of having palmed his trump card—the rediscovery of podalic version—from the midwives of the Hotel Dieu. Mrs. Nihell's book is the best known and most characteristic representation of the innumerable English polemics written in the eighteenth and nineteenth centuries to stay the advancing tide of man-midwifery. Had she lived two centuries earlier her propensity for scolding might have made her a candidate for the ducking stool.

III.

And now before going into real obstetrics the writer must confess humbly that his obsession by these volumes and their contents has taken yet another form—still in its essence non-obstetrical. Man may have *practiced* obstetrics long before he had a language, even though Elizabeth Nihell tells us* he was nothing but an interloper from the first; but before he ever *studied* obstetrics he must have had a language in which to clothe his thoughts. Then why not browse just a little, in true Shandyan style, by the wayside amongst the rich herbage of teymology and syntax springing up or withering amongst these pages? One may write history from words, and why not obstetrical history just as well as any other? And although these brief observations are of necessity fragmentary and discursive, the writer trusts that in thus following at a respectful distance in the footsteps of Max Müller he may stimulate a renewed interest in the study of our medical language.

Even the most casual student of philology will find his attention

*And proves her thesis with the usual texts. She admits that Eve's emergency must have made Adam the first midwife, but disproves the modern contention that hence his title must have descended in the male line, by producing documentary evidence to show that this title was immediately extinguished by the refusal of his immediate descendants to recognize any binding force in his example. "The Israelites did not use men to lay their women," Genesis 35:17; 38:27; also Exodus 1:15-22. Her argument is cogent and suggestive, and should convince anyone open to conviction. A certain J. Blunt who wrote about the same time also takes occasion to remind her brethren of the humiliating fact that in all the animal kingdom the male of the "obstetrical frog" (Reaumur) is the only one to officiate at the delivery of its young.

arrested on every page of these books by two especially noteworthy variations of the language from its present form :

1st. The survival into eighteenth century medicine of many ancient and respectable words which have since totally disappeared from polite dictionaries. Many of these words appear to modern readers as strange and altogether meaningless vulgarisms.

2nd. The relation in which the so-called "dead languages," and especially Latin, were standing to the mother tongue in the rapid development which scientific nomenclature was undergoing during the seventeenth and eighteenth centuries.

This was a language period in which the processes of word evolution were actually visible on the surface. In our day the equilibrium of all language, as to both etymology and syntax, is quite stable; the elegant Latin has not only permanently crowded out the humble Northern and Anglo-Saxon mother tongues, but like an arrogant upstart has finally brought them into contempt. In that day the medium was turbid with old roots and undifferentiated synonyms which had not yet settled to the bottom, and with new words and forms which had not yet entered into solution. The language boiled with the warfare of incompatibles. The examples which have been selected almost at random from these books are illustrative of this philological conflict waging in the medium of scientific expression.

In the new development which language had taken on, in response to the stimulus of the printing press on the one hand and the free growth of thought achieved by the Reformation on the other, there was little notion of either philological exactitude or consequences. The tendencies of language were—as they probably remain today—unconscious and unguided ones; there was no science of philology and no encyclopaedists to enforce rigid rules of form, and printed letters and words were but the media of vocal speech on the one hand and of ideas on the other, to be added to or taken from as the occasion of the moment required. The language was rich, impure, mutable. Hence arose either easy changes of spelling to interpret various changes or ideas of sound, or substitution and addition of words to meet changed or added meaning.

And yet in all these changes of words and inflections it is surprising to note how few changes have occurred in the syntactical skeleton and thought sequences of either the German or English languages. In like manner, old prepositions, conjunctions, and other

linkwords have survived in all Gothic languages with scant change in pronunciation and but little in spelling, so that the root remains but slightly obscured: e. g., *and*, *unnd*, *und*, *undt*, *un*; *bey*, *by*, *bei*, *beym*; *uf*, *auf*, *up*; *vor*, *wor*, *for*, *für*; *worbey*, etc. On the other hand, although many changes in the old very liberal and often irrational spelling of inflected words were but slight to keep up with slight changes in sound, the change was sometimes sufficient to obscure the root: e. g., the *poached** egg easily became the meaningless *potched* or *porched* egg.

In many German words the root spelling has been changed and confused, though the sound is little altered; e. g., *echt* was to *etwas*; *ohne* *gefahr* to *ungefär*; *sweer* to *schwer*. In others the root has become almost unrecognizable through changed spelling to meet degenerated pronunciation; as, *itzo*, *sintemahl*, *verunttibten*, *geblibenen*. These changes are especially noticeable in the numerals and their derivatives; e. g., *vierdte*, *eilff*, *zwo*, *viertzehen*, *viertheil*.

In other cases the word became simplified both in pronunciation and spelling without change in root or meaning; e. g., *wündsche* to *wünsche*; *Brandewein* to *Brantwein*; *nimbt* to *nimmt*; *Tummheit* and *Teutsch* to *Dummheit* and *Deutsch*; *Guttsche* to *Kuttsche*; *spraak* to *sprach*; *privy* became *private*, and *privities*, *privates*.

The old English *assoon* and *chafindish* and the old German *Kanstu*, *wirstu*, *fühlstu*, were survivals of the Gothic tendency to couple words together in written language when the spoken language did the same. And yet the old German said *zu rücke* instead of *zurück*.

Along with these minor changes in the common linkwords and vernacular skeleton,—changes, which may be described as gradual and natural, the language of science was undergoing a radical and somewhat catastrophic evolution, not only because of the addition of new material requiring new words, usually nouns and verbs taken bodily from the Latin to meet the novel conditions, but through the substitution of scientific Latin for old vernacular nouns and verbs. It is easy to trace this change in old German, for before the Latin words became effectually and permanently welded into the printed language it was the custom to spell the Latin root in the Latin characters, and any local addition to the word was printed in Gothic. Here is a short list of these broken words taken at random from a German seventeenth century book: *Penetrir/en*, *accelerir/ung*, *tractir/en*, *citir/en*, *ad-*

*From the Old French *pocher*—to break out.

hibir/ung, author/s, probir/et, chirurgi/sche, operatio/nen, patien/ten, effectui/ren, praesupponi/re, auctori/tät, phantasi/ren, medico/s.* Most of these words have now permanently replaced those of Northern origin, and it must be admitted that the substitution has sometimes strengthened the language by making it more exact and formal. On account of the early adoption of the Latin characters in the written language the English door has always been open for Latin words, which were thus easily assimilated without the probationary period required in the German.

Sometimes the Latin or Greek underwent queer changes simply in passing through unfamiliar lips or pens; e. g., *sphincter* became *sphyaster*; *chyrurgeons* became *chirurgeons*, and later *surgeons*; *dyet* became *diet*; the *urachus* came into English from Greek through the French as *ouraque*;** in somewhat the same way *afterbirth* was corrupted to *after-burthen* through contact with the German *After-Bürde*. The Latin word *carbunculus* (little live coal), found a ready lodgment in both German and English tongues, but the German added an extra twinge of pain to the thing by corrupting it into *Karfunkel* (*funkel*, to sparkle or twinkle).

The German language has resisted the encroachment of the Latin much more effectually than the English. Several factors have united to maintain the German and to break down the English: 1. The English was almost from the first a composite language which found it easy to take on modifications. 2. The English use of the Latin characters in the written language. 3. The national solidarity of the Germans in custom, orthography, race and folk spirit, and resisting power. Even today a strong feeling against philological intruders exists in Germany, from the Kaiser down, with the result that whilst the folk tongue has almost entirely dropped out of medical English, the medical German is still rich enough in old nouns and verbs to be able to replace itself almost completely were all Latin words to be withdrawn. For example, *gebär-mutter, eierstock, eier-leiter, hoden, scheide, affter, kinder-mutter, wochnerin, seitengeburth, geburtsstrasse*,

*Applied in this case to a delirious woman seven days in labor with a still undelivered dead child. There is a considerable philological gap between this German word taken bodily from the Greek *φαιραία* and the English word fancy, but the gap is spanned by phantasy, phantast, phantastic; and in an old volume written in the fluid English of the seventeenth century, we catch the word in the very act of transmutation—phant'sy.

**Thus spelled by Hugh Chamberlen.

monatskind or *mondkalbe*,* *mutter-gewächs*, etc. Few old words, if any, representing these ideas are still to be found in working order in the English language; their English ideas exist at present in no form other than Latin. The middle English had an equivalent for *mondkalbe* in *moon-calf*, which has come down to us in Shakespeare's half-human Caliban:

Ste. "How now, mooncalf! how does thine ague?" and
Trin. "I hid me under the dead mooncalf's gaberdine."

—Tempest II:11.

But the true meaning of the English word is lost without the intervening German word *monats-kind*, meaning month's child, moon-child—a conception thrown off at the monthly period. The Latin substitute *mole* is scientific, but sadly lacking in pictorial or traditional quality.

But although the English tongue has never added any new words of Anglo-Saxon origin since the Latin gained a foothold, the virility and beauty of the old language has enabled it to make a hard though losing fight for its own parts of speech.** Probably the last of these common medical English words will before many generations become obsolete, with the latinization of all scientific words in most modern languages. And yet it would be a pity, for example, to lose the very old Anglo-Saxon word *womb* out of the English. This word will probably go eventually, except as it will always remain with us as an indispensable root-word in *woman*, for though we find it in the Danish, Gothic, Swedish, Icelandic, etc., the root has no place either in German or in the Romance languages. Midway, however, between the Anglo-Saxon womb, meaning belly,** and the more narrow Greek work *μωτέρα*, meaning the organ itself, a curious temporary interposition took place; the English and French languages took up with a latinization of the Old German *Mutter*, which, as *Gebähr-mutter* still has a dignified place in the pages of German scientific text books; the womb became the middle English, French and German *matrix*, and remains so in French to this day—*matrice*.

This total extinction of almost all Anglo-Saxon words for the procreative organs is most interesting. In the old books the testicle and the ovary were alike *stones* or *seeds*, and later on became latinized both in German and English, and at first without sex discrimination,

*The Latin *falsum germen* was also sometimes used, and has been rendered into literal English as "false conception."

**Forty per cent of colloquial English is still Anglo-Saxon.

***Writers as late as Chamberlen called pregnancy "Great Belly."

into *testicle*.* The pelvis was *basin* or *becken*, and the pelvic bones were *share bone*, *haunch bone*, *holy bone* (*heiligenbein*, or *sacer***). The scrotum was described by Jane Sharp as the Codd. This word is Anglo-Saxon, and in Middle English is *Codde*, in Icelandic *Coddi*, in Welsh *Cwd*, in Low German *Koden*, and means belly, sac or paunch. The writer has noted its occasional use in this country in modern vulgar dialect. Jane Sharp called the male organ the Yard, and the glans was the Nutt of the Yard. Yard is an Anglo-Saxon, Gothic, Icelandic, Scandinavian word, from *gyrd*, a rod or twig, or spear, and has an enormous number of derivatives. For example, the word came early to mean a unit of measure, hence an enclosed or measured space, *g(y)arden* and *orch(y)ard*; the word actually exists in the Russian language in the name of the city *Nijni Novgorod*, which was originally built around an enclosed space for holding a fair. See also *Yard-arm*.

Still quoting from Jane Sharp, we confess to being somewhat startled by the following choice specimen of Middle English. "If the child comes Arsewards or Buttocks first, lay her with her head lower than her Bodde."*** The phrase, "to lay a woman" from the Anglo-Saxon *lecgen* and Middle English *ligger* was synonymous with "to confine,"**** and together with the companion phrase "to bring to bed," remained in common use until the beginning of the nineteenth century when both became obsolete, together with the old expressions "to take" or "to try a pain," meaning to assist or examine during a pain,

*Jane Sharp says, "I have seen one seed of one woman, and but one, and that is more by one than many men have seen." The word is used often in another sense, as by Mauriceau: "The Fallopiian trumpets are ejaculatory vessels made rough so that the (male) seed may not run back." Note that Mauriceau reverses the action of the cilia! and is altogether at sea over the functions of the "ragged piece." This was before the day of Leeuwenhoeck.

**The old Latin words for epilepsy (*morbus sacer*) carry the same significance, but this is again lost in the common German words for the disease—*schweren Noth*.

***She has the same fondness as Shakespeare for monosyllabic Anglo-Saxon; for example, her injunction to "annoint the parts with fresh butter to make them *glib*" (from old Dutch *glibben*) suggests the witches' cauldron in *Macbeth*:

"Make the gruel thick and *slab*."

****The two words *lecgen* and *confine*, from the mediaeval Latin *consequere* or two, but 'tis soon over."

***The two words *leggen* and *confine*, from the mediaeval Latin *confinare*, have distributed themselves into modern language in several directions. Thus we find *lecgen* in the English and French word *lecture* through the intervening Latin *lectus*, a couch. It occurs again in the French *lit*, a bed, and we may see it in process of transmutation in the writings of Louise Bourgeois as *lict*, where the Latin "c" is still in the written word, but silent. *Confinare* has become the German *entbinden*, the sense of the word being accepted literally but without any transfer of the root.

and to "touch," meaning to examine. The old Middle English "*to lie in*" is obsolescent though it will last a long time yet in "*Lying-in Hospital*." As for the fifth word in the quotation, it is a survival of one of the oldest words in written or spoken language, going back to a root not only common to all Northern tongues, but even also to be identified in a slightly modified form in the Greek *oppos* or *oppos*. The word still survives in fairly decent German.



Paul Portal; Title Page; 1685.

An old Anglo-Saxon word which is probably too closely interwoven with history and literature ever to be driven out of the language, is the English word for cranium—*skull*, *scull*, *sculle*, *skulle*, *schulle*, back to *skaal* and the Icelandic *skal*—a pan, bowl or goblet, and the *skoal!* of the hard drinking Norsemen. Here are Jane Sharp's thoughts on embryology: "The *scull* and whirl bones are made first, but farther than that I have nothing to say, for I love not imperti-

nent disputes like those Grecians who contended largely whether the elephant's tusks were horns or teeth."*

Another Gothic or Anglo-Saxon word which survives to this day, both in English and German, in spite of the Latin *umbilicus*, is *Navel* or *Nabel*, from *Nafela* and *Nafu* in Anglo-Saxon, *Nabula* in Gothic, *Nafli* in Icelandic, and *Nafle* in Swedish, meaning the central point. In the seventeenth century the Latin word for navel had not yet been introduced into either the English or German, and neither language would now suffer through its absence. An interesting philological query arises in connection with this Gothic word—does the nave or axis of the Gothic church take its name from our word for navel or does it go back to the Sanscrit *nau*** through the Latin *navis*—a ship?

A word which has carried its Northern ancestry with it all over Europe is the Scandinavian word *Schorbauch* or ruptured belly, which has become *Schorbuyck* in Dutch, *Scharbock**** in German, *scurvy* in English, and *scorbute* in the French. The disease came into Europe from the North with the armies of Gustavus Adolphus and Charles XII, and the Scandinavian name for it was rendered from Low German in the mediaeval Latin *scorbutus*, hence the French *scorbute*.

And now, to wind up this philologico-obstetrical digression, here is a quotation from Mauriceau (translated by Hugh Chamberlen), containing a word which gave the writer an exciting paper-chase: "Many Women could not keep themselves on their Legs, immediately after they are brought to Bed, were their Pelvic Bones disjoined or separated during Labour—I noted that very well in the *Hostel de Dieu* of Paris, in the many I have layed there. When women that were to be brought to bed, began to be in Labour, they went into a little Room called the *Stove*, where all were delivered upon a little low Bed made for that purpose, where they put them before the Fire; afterward, as soon as it was over, they were conducted to their Bed, which was sometimes a good way off from this little Chamber, whither they walked very well; which they could never have done, if their Os pubis, or those of the *Ilia*, were separated the one from the other." "The *Stove*!" The casual reader might suppose the ladies temporarily sojourning in the *Hotel Dieu* applied this somewhat suggestive epithet to the confinement room on account of recollections not altogether

*Not such an ancient sort of discussion after all—a theological writer of the early nineteenth century raises the cognate question "whether leopards and mules could properly be called creatures."

**Canon Trench thinks the word is from *nau*, *navis*, preserving as a symbolism the old word almost in its original form; but some philologists take the alternative viewpoint.

***Sommern, loc. cit.

unassociated with the idea of fiery torment. Not so—the word *stove* meant in Anglo-Saxon and Gothic simply a room, and later, a room heated for a bath or other purpose. The word was *stofa* and survives in the German as *stube*. In Middle English *stove* meant simply a room. The old German midwives used *stowen* to heat the *stuben*. In old Dutch hostelrys the heated common room was The Stove. Truly the drifting sands of English philology have to be shoveled out of the smoky old Anglo-Saxon *Stofa* before we can recognize the ancestor by marriage of our modern base-burner.

This word occurs with the same meaning in the documentary record of a certain episode in the stormy life of the third Dr. Peter Chamberlen—the father of the translator of Mauriceau.* In 1649 the House of Lords granted him an ordinance for constructing “artificiall Bathes and Bathe stoves.” The *stoves* referred to were rooms or buildings to be erected for the purpose of accommodating public baths. This ordinance went to the House of Commons and, after reference to the “Colledge of Physitians,” was not concurred in because the “Colledge did not think the erecting of publike Bathes should be granted to Dr. Chamberlen because the Colledge thinks them hurtfull to the common-wealth.” Among the reasons given by the college for believing the baths hurtful is that “by their abuse they were the cause in the Greek and Roman cities of so much physicall prejudice in effeminating bodyes and procuring infirmities, and morally in debauching the manners of the people, y^t in three of them upon the coming of the Christians into power they were demolished or converted to other uses.” Other reasons were put forth by the learned faculty for refusing to endorse the baths. For example: “This country is too cold.”—“The Bathes will be a monopoly.”—“They may be the cause of Sinne.”—“They are remedies for the French disease,” etc. These reasons were all well enough, but the real reason why the faculty did not want the ordinance passed was because of jealousy of the Chamberlens, who, for four generations, were physicians in ordinary to the Stuart dynasty, and later served William and Mary and good Queen Anne in the same capacity.

*See Aveling, “The Chamberlens,” Churchill, London, 1882; pp. 60-77. Dr. Aveling reproduces the document without comment on the difference between the medieval and modern meanings of this word.

THE TREATMENT OF ECZEMA FROM THE STANDPOINT OF THE GENERAL PRACTITIONER.*

By PHILIP F. SHAFFNER, B. S., M. D., CHICAGO, ILL.

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Probably no other one group of dermatoses comes to the attention of the general practitioner oftener than the eczemas—and it is likewise true that at times no other skin disease is more difficult to handle and more rebellious to treatment. For these reasons I am attempting this evening to give to the members of this Society a rational, concise scheme of treatment, derived from the resources of those who have been specially trained in the practice of dermatology, and yet a therapy easily adaptable to the general practitioner, who most frequently is the first one to see these cases.

First, we must remember that dermatologists are as yet divided as to the exact line of distinction between a dermatitis and an eczema. Authorities differ markedly in this regard, but, no matter what opinion we accept, these two diseases are bound to overlap occasionally. I accept the Vienna conception and I am presenting it to you because of its simplicity and logicity. Both a dermatitis and an eczema are inflammations, and as concerns therapy both are treated similarly, but the Vienna school distinguishes between eczema and dermatitis along the following lines: Dermatitis ceases with a cessation of the irritating cause; eczema does not. Dermatitis remains stationary, while eczema "jumps over" normal skin, so to speak, to distant places. Dermatitis can exist in any individual, while eczema exists only in a person with a predisposition to the disease.

Accepting these differences, one can see at once that the occupational inflammations of the skin, the familiar poison ivy dermatitis, solar erythemas, etc., etc., namely, those conditions that tend to clear up upon removal of the cause, all belong to the group of dermatitis, while the indifferent, chronic skin inflammations, with no apparent etiology, that tend to persist regardless of the removal of the cause, or frequently in spite of any therapeutic measure we may institute, fall into the category of the true eczemas.

Since both diseases are bound to overlap, I shall, for the sake of clearness, use the terms dermatitis and eczema interchangeably,

*Read before the Academy of Medicine, Grand Rapids, Mich., May 15, 1912.

placing both conditions in one large group, and discussing the treatment solely from the viewpoint of the state and nature of the inflammatory process.

Treatment. First, let us for a moment consider the internal management of the cases. Remove or remedy the cause, if such can be found. This involves a careful and thorough examination of the body and a likewise careful laboratory examination of the various secretions—the presence of renal disease, pancreatic diabetes, organic heart lesions, or involvement of the arterio-venous apparatus, pathological conditions of the blood, faulty metabolism manifested by various conditions, such as obesity, hyper-acidity, indicanuria, constipation, etc., etc. These facts are well-known to you and the remedies for these abnormal conditions are at your disposal. Locally, we should ascertain if there is a hypo- or hyper-secretion of the sweat or sebaceous glands, or if these secretions are chemically altered, because frequently in such abnormalities we find the etiological factors of these eczematous conditions.

The French school uses drugs internally because it believes that eczemas are entirely infectious. The Vienna school treats this group externally because it holds that the disease is external in character, with an internal underlying cause. I am of the opinion that in the long run we can gain more by adhering to the Vienna school.

We now come to the important part of our discussion—the local treatment of eczema. It is important because, regardless of our success or failure in determining and treating the etiological factors of the disease, one little slip in good judgment in our local therapy can undo all the good we have accomplished and delay the healing indefinitely, or harm the patient permanently. One rule I wish to impress on your minds is *treat the most pronounced symptom* whether it be the redness of an acute inflammation, the weeping of a vesicular eczema, the infiltration of a subacute stage, or the squamous, verrucous, horny nature of a chronic case. Of course, in no one given patient does a single symptom exist. Naturally, in a vesicular eczema we may find papules, and in a papular inflammation we may find vesicles, and in an acute hyperemia we may have papules commingled with the redness. It is the *predominating* symptom of any case which attracts our attention, and this most pronounced condition should be treated until it has disappeared entirely or given way to some other feature of those rapidly changing dermatoses. By adhering religiously to this rule, one can effect a cure in almost all of the acute inflammations of the skin, and cure, or at least improve mark-

edly, the vast majority of the obstinate chronic cases. I repeat, *treat the most pronounced symptom.*

Along these lines we shall now consider our various methods:

1. When hyperemia is the most pronounced symptom. By hyperemia in this connection I mean an acute redness accompanied usually, as you well know, by swelling, increased local temperature and a feeling of tension of the skin. According to our rule, it is this hyperemia against which we bend all our efforts.

There are two well defined methods of procedure: 1. Powders. Such treatment is of value in the very acute cases only, and we have our choice of vegetable powders, such as starch, lycopodium and rice, or the metallic, as zinc, magnesium carbonate, talc, bismuth or alum. The vegetable powders are indicated if no weeping is present, while the metallic preparations are valuable in the cases where moisture accompanies the erythema. Any one of these preparations, according to the specific indications, is to be applied thickly and frequently. A popular and efficient method of using powders is to incorporate them in as small a quantity as possible of ordinary vaseline—just enough to form a mixture of the base with the powder, such as:

R

Zinci oxidi.

Amyli, aa..... 10.0

Vaseline, q. s.

This mixture is efficient because the thick paste formed adheres to the skin, keeping the medicament on the part constantly.

2. A second method of combating hyperemia in this type of eczema is by the use of cold, moist application, which, to my mind, is the best method of all. We have our choice of several preparations: (a) Liquor alumini acetatis, prepared according to the National or German pharmacopoeia, diluting the official preparation, which is eight per cent, to one or two per cent, using water as a diluent. (b) A mixture of subacetate of lead solution, twenty-five parts, to five of alum, and five hundred parts of water. (c) Resorcin water, one to two per cent. (d) Boric acid, one to three per cent. (e) Thymol, 1/5000 to 1/1000.

In regard to all of these astringent lotions, irrespective of which one we use, we must remember the more intense the degree of inflammation, the stronger the concentration of the solution. Moreover, and this is very important, the applications must be applied ice cold, the gauze or linen used must not become dry or warm. Obviously this necessitates very frequent changing.

There are two methods of bandaging these cases. One, which is very efficient, but at times irritating, is to take eight to ten layers of gauze which have been immersed in the medicament, apply them to the skin, then cover them with gutta percha, cotton and finally an ordinary bandage.

Should irritation result, the following procedure can be substituted: Cover the skin with several layers of dry gauze, then apply a top layer, previously immersed in the ice cold solution, with a middle or dry layer interposed, this middle, or "meat part" of the sandwich being changed frequently. In this way the skin receives the benefit of the cold, moist astringent top layer without the irritating effects of the medicament. Properly applied, these cold, wet dressings never fail.

Personally, I prefer the liquor alumini acetatis or the resorcin solution above all others. The former is used almost exclusively in the European clinics, and one once having employed this preparation can readily understand its popularity. However, it is very necessary to procure either the National Formulary or the German pharmacopoeial preparation, properly made, or the excess of acetic acid commonly present in the solution improperly made is often irritating and even harmful. The liquor alumini acetatis corresponds almost entirely with Burrow's solution, and the latter can be used as a substitute for it. The formulae for these preparations can be found in the National Formulary.

(3) A third method for treating the hyperemia is the use of a mixture incorporating both the powder and the astringent lotion. There are many types of these so-called shake mixtures, but I shall give you only one:

R

Zinci oxidi.	
Amyli, aa	10.0
Talci	5.0
Glycerine	6.0
Phenolis	1.2-2.4
Aq. calcis, q. s. ad.....	240.0

This preparation is applied frequently and directly to the part. The lotion portion of the mixture evaporates, leaving a fine layer of powder as an astringent and protective. The phenol is used to combat any slight infection which may be present and likewise to relieve the intense pruritis which many of these acute hyperemic eczemas produce. Often, instead of the zinc oxide, or even in com-

bination with it, I employ calamine powder, using the crude drug. The old-fashioned popular calamine lotion is no doubt familiar to all of you. If weeping to any marked degree accompanies the hyperemia, such a lotion should not be used at all, or, if employed, the amount of powder in the mixture should be reduced to a minimum because of the "caking" of the powder upon applying it to the weeping skin surface, which leads to a harmful retention of the secretions under the caked mass.

II. We shall now consider the treatment in those cases where moisture, either as such (extra-dermal) or as serum contained in the unruptured vesicles (intra-dermal), predominates. Whether the vesicles are unruptured, such as eczema vesiculosum, or ruptured as in the type known as eczema madidans, a condition seen after the contents of the vesicles have been poured out on the surface, the treatment is practically identical, our aim being to dry up the skin. Of course, these examples of cases where weeping predominates often exhibit other lesions, as crusting, pustulations, papules, etc., etc., but I refer again to our rule: Treat the most pronounced symptom. To overcome this weeping, either intra-dermal or extra-dermal, we have our choice of two methods of treatment:

(1) Cold, wet applications, the same solutions and the very same methods of applications which have just been given you in discussing the treatment of erythematous eczema are efficient in drying up the weeping skin. When the vesicles are mostly intact, the lotions by maceration rupture them, and the contents of these vesicles are absorbed by the medicated gauze. One can accomplish wonders in a brief period of time in these types of cases, provided these lotions are applied as directed.

(2) A second method of treating this very same stage, and one that is often very successful, is by the use of the diachylon ointment of Hebra, which is made by mixing fifteen ounces of olive oil and three ounces of litharge (lead oxide) with a pint of water. The detailed directions for making this salve are unnecessary, as it can be purchased already made up from any good druggist. The official preparation contains oil of lavender as a perfume, and frequently this oil is irritating, so it is always best to prescribe the diachylon ointment without this oil.

As a general rule, we avoid the use of an ointment on an acute weeping surface, but diachylon ointment is an exception to the rule in almost all cases. At times when the inflammation is very intense one can either resort to applications only, or else employ Hebra's

salve in combination with a zinc oxide paste, salve or vaseline base, using the diachylon in strengths varying from ten to fifty per cent, according to the case.

So, then, we find that either lotions or lead oxide ointments can be used in cases where weeping predominates. In intra-dermal weeping one can use either one of the two methods, or both—that is, lotions by day and the ointments at night. In the case of an eczema madidans, lotions answer, perhaps, somewhat better than ointments—at least, if the diachylon is to be used, it is best to dilute it with some ordinary ointment base.

III. We shall now consider the treatment of eczema when infiltration of the skin is the predominating symptom. Such cases are the chronic ones, occurring in all parts of the body, but especially on the extremities. At times the lesions clear up, but to recur usually in the spring and fall. Itching is a frequent and often distressing symptom; there is a marked thickening of the skin, some scaling, and occasionally weeping and fissures.

In order to understand the management of such cases, we must recall that histologically we find a small round-celled¹ infiltration, widely dilated lymphatics and blood vessels, and some edema of the tissues—in brief, the pathological picture of a chronic inflammation. Now, how can we combat this inflammation, resolve this small round-celled proliferation, compress the dilated lymphatic and blood vessels, and restore the skin to normal consistency and appearance? The one preparation which is probably the best with which to start this treatment is the well-known Lassar's paste. As you know, the official paste contains two per cent of salicylic acid, and as frequently this may prove irritating, it is best to write for the following: A Lassar's paste without any salicylic acid:

R

Zinci oxidi.

Amyli, āā.....25.0

Petrolati50.0

As you can see, the preparation contains just as much powder as ointment base, and there is a definite reason why we should use a paste instead of an ointment. The greater consistency of such a paste, especially when it is applied on gauze, placed on the skin, and bandaged, has a greater mechanical effect in compressing these dilated vessels than would an ointment applied in an indifferent way. This may seem strange, yet in remembering that these dilated lymphatics and blood vessels are but microscopic in size, the truth of the matter is apparent.

So, then, we will commence treating our case with Lassar's paste, bandaging the part freshly every twenty-four hours and cleansing the skin before with any indifferent oil. Of course, modifications of this paste may be necessary, as for example, if the itching is intense. In such cases we can add menthol in one-half to one per cent strength, but we should then substitute lanolin for vaseline in our base—writing for this mixture:

R

Mentholis	1.0
Zinci oxidi.	
Amyli, āā	25.0
Lanolin	50.0

When fissures are troublesome, it is best to paint them with

R

Hydrargyri bichloridi	0.133
Tincture benzoin co.....	30.0

As a rule, after five to seven days of proper application of Lassar's paste, the skin begins to soften, the bluish-red tinge begins to fade, and the infiltration becomes less marked. In some cases no results whatsoever are obtained with the zinc paste. In such patients we can frequently obtain the desired effect by painting the lesions with a two per cent silver nitrate solution and by then applying the Lassar's paste.

The next step in our therapy after the skin begins to soften is to stimulate the tissues. By such counter-irritation we rid the skin of the inflammatory products and restore the tissues to normal. There is no better stimulant for this purpose than tar, either as *pix. liquida* (wood tar), *oleum resci* (oil of birch), or *oleum cadini* (oil of Juniper). Tar is the sheet anchor of the general man in his treatment of eczemas, but to secure the best results it must be used cautiously; that is, in weak dilutions at the start, say one to three per cent, increasing gradually up to twenty per cent, or even higher in some cases. *Oleum rusci* is the best of all the preparations, and likewise the most expensive. When unobtainable the oil of cade answers sufficiently well.

So, then, after treating our patient for a few days with Lassar's paste, we proceed to incorporate one to three per cent of tar, using the zinc oxide paste as a base. Feeling our way along, we can gradually increase the strength up to ten, fifteen or even twenty per cent, with good results.

Lassar once said that tar properly used could control eighty

per cent of all dermatoses. Tar fails in many cases because it is often used when an eczema is too acute or, even when indicated, the drug is frequently employed in too high a concentration. So use tar cautiously in selected cases and you can be assured of good results.

One excellent tar ointment is the so-called Wilkinson's salve or modification of it. Wilkinson's ointment is composed of the following:

℞

Sulph. praecip.
 Olei resci or cade, āā.....10.0
 Sapo viridis.
 Lanolin or petrolati, āā.....20.0

We can start using one part of this ointment with five of a base such as Lassar's, etc., and gradually increase the proportions of the Wilkinson's salve and decrease that of the base until we are using the tar ointment in full strength.

There are numerous other drugs that can be used in treating this stage of eczema—used either alone or in combination with tar or other preparations. One probably not very well known to most of you is naftalan. This is a crude coal tar product, mined, supposedly, in Siberia. It has the consistency of axle grease and can be used in fifty per cent strength, according to the following:

℞

Naftalan50.0
 Zinci oxidi.
 Amyli, āā.....25.0

Tar can be added to this, as can salicylic acid, in strengths varying from one to five per cent. Salicylic acid is especially indicated in cases where hyperkeratosis or excessive scaling exists, employing the salicylic acid as a keratolytic agent to dissolve the excessive keratin and thereby soften up the lesions.

Ichthyol, resorcin, and sulphur are other drugs of use in treating this type of eczema. Frequently we can derive much benefit from a twenty-five per cent ichthyol aqueous lotion painted on twice daily, with a ten per cent ichthyol ointment in a soft zinc salve, or a zinc paste bandaged on the part over night.

Resorcin has about the same uses as salicylic acid, while sulphur, although employed empirically in treating this type of eczema is often productive of good results. Frequently ointments with small percentages of these drugs are more efficient than the higher concentrations. In almost all cases of eczema the preparation should be energetic enough to stimulate, but not to irritate.

IV. The fourth type of eczema with which we are concerned is that form known as the hypertrophic, warty, or verrucous horny variety—that is, the type exceptionally chronic with the warty character predominating.

We have not as yet considered the toilet of the eczematous patches in any stage. The question of the use of soap and water on these inflamed skins is of the utmost importance. In the first three types already discussed, as a general rule, the use of soap and water is contraindicated. Both are frequently irritating and it is always advisable to prohibit their use. A bland, non-rancid oil, oatmeal or bran water, will cleanse the parts well. At times even the oatmeal and bran water are irritating, but we can always rely on the bland oils. However, in this stage the hypertrophic warty form which we are now discussing, the use of soap and water, accompanied as we shall see even by vigorous scrubbing with a brush, is not only permissible, but decidedly beneficial to the patient.

In handling these cases the problem which presents itself first is to get rid of this warty tissue. For this we have several methods:

1. Mild soap and water and the vigorous use of a brush until a slight hemorrhage occurs. We then know that we have gone through the verrucous epithelial tissue and have reached the corium layer of the skin.

2. A second method, one which is strictly Viennese in origin, is the use of potassium or sodium hydroxide in ten to twenty per cent strength, applied to the tissues with an applicator. When pain is felt, when we know that the alkali has eroded through to the corium, water is applied merely to prevent further erosion, the part is dried and then painted with a fifty per cent silver nitrate solution. After such treatment the skin becomes flattened and the previous warty tissue is replaced by a fine superficial scar.

3. An ordinary ointment base, such as vaseline or a boric acid salve, or, what is probably even better, two to four per cent salicylic acid in a base, if applied thickly to the skin, covered with linen, cotton, and bandage, and allowed to remain there for twenty-four hours, is usually successful in so macerating this verrucous tissue that its removal is most simple.

4. One of the best and simplest ways of getting rid of this warty growth is to apply the strong alkali as before mentioned, and then by taking a fairly sharp curette mechanically remove this hyperkeratotic tissue.

Regardless of the methods we employ in our endeavors to flatten

the skin surface, we must next apply some medicament which will take care of the chronically inflamed skin underneath. For this we can use diachylon ointment alone or in a zinc paste, ten to fifty per cent in strength.

Oil of birch, or oil of cade, or even crude tar, either in ointment, in olive oil, or perhaps painted on in full strength, are also to be recommended. We can, to good advantage, also make use of the medicated plasters, such as salicylic acid soap plaster, ten to twenty per cent, or various strengths of tar plasters. These are cut out to fit the lesions, applied, covered with cotton and then bandaged; removed every twenty-four hours and reapplied in the same manner. The best plasters for such therapy are those made by the firm of Beiersdorf, of Germany, and, whenever possible, it is advisable to use this make.

If the eczema heals under such treatment, well and good. If, however, our treatment is unsuccessful or only partially successful, if we have succeeded in removing the verrucous tissue but the infiltrated thickened condition of the skin still persists, it is then our object to treat the case according to our general rule. *Treat the most pronounced symptom.*

I would not consider our paper complete unless we said a few words concerning the common and often unrecognized entity—the so-called eczema seborrheicum of Unna. The condition is one involving the sebaceous glands, particularly those parts of the skin where these glands are the most numerous, such as the scalp, ear, temples, forehead, neck, sternal, interscapular, and even the inguinal, scrotal, axillary and umbilical regions; often it affects the scalp alone, and we then have the condition popularly known as dandruff. When seborrheal eczema, or seborrheal dermatitis, as it is frequently termed, extends, we find it starting from the scalp or face and going downward often to the feet, involving in turn those regions rich in sebaceous glands.

The principal features of seborrheal eczema are the slightly reddened skin covered with yellow scales, dry, or, as is usually the case, fatty and greasy in character, often piled up in heaps, then stimulating psoriasis. The lesions are usually round and oval and by coalescence of several such areas polycyclic gyrate bands may be produced. Itching is not excessive and is often absent. We must not forget that many eczemas, while not belonging entirely to this group, may present, because of their underlying seborrheal basis, only an atypical type of the disease. Such cases, for example, are many of the infantile eczemas, starting as the so-called milk crusts, so frequently

observed on the scalps of young infants. As you well know, this form of eczema rapidly extends down over the face, ears, and even to parts of the body.

As concerns treatment of this seborrheal group, again the condition of the skin determines our procedure. That is, if the eczema is of the weeping type, we resort to the cold astringent lotions. And here resorcin seems to be almost specific, used either in aqueous solution, one to two per cent in strength, or in a mixture of equal parts of alcohol and water. The lotions are continued until the weeping ceases, when we resort to the treatment commonly used for the dry forms. For these we have our choice of sulphur, resorcin, salicylic acid, ammoniated mercury, or tar. The first three especially, are our anti-seborrheal drugs, and these should always be employed, at the start at least, until they fail to bring about the desired results.

When the lesions are dry, fat-free, as they frequently are, we simply add a fat to our preparation and then, instead of prescribing a drying lotion, incorporate our remedies in a fatty ointment, such as:

R

Sulphur praecip.....	10.0
Resorcin	3.0
Salicylic acid	1.0
Ung. simplex, q. s. ad.....	100.0

This is used during the night, and either a two per cent resorcin water lotion, or a one per cent salicylic acid in alcohol, is our preparation of choice applied several times during the day.

A prescription which I employ, modified sometimes according to circumstances, one almost always productive of good results, is the following:

R

Phenolis	1.0
Balsam Peru.	
Hydrargyri Ammoniata, āā.....	5.0
Vaseline, ad.....	100.0

The official ten per cent white precipitate ointment for adults, or diluted to five per cent in children, will frequently bring about a disappearance of the seborrheal eczema.

As a final remedy in all cases of eczema, after all other methods have failed, X-ray is to be highly recommended. Of course, as you well know, such treatment in the hands of inexperienced workers is not without considerable danger. The exposures should always be brief and should not follow too closely on one another, the dis-

tance between the tube and the skin about twelve to fifteen centimeters, and the tube used should be a soft, non-penetrating one. In many cases of eczema that have resisted all other forms of treatment, a few exposures to the X-ray will have a marvelous effect.

And now, gentlemen, although my talk has from necessity been limited to a mere outlined discussion of the treatment of eczema, I trust it will prove of value to you. If it has but convinced you that good judgment and common sense alone are necessary and are just as effectual in the hands of the general practitioner as in those of the specialist, I am well pleased with my endeavors here this evening.

31 NORTH STATE STREET.

PHYSIOLOGIC THERAPEUTICS VS. DRUGS.

By CARL STRUEH, M. D., CHICAGO, ILL.

What is meant by physiologic therapeutics?

Physiologic, i. e., natural, is the contrary to unphysiologic, i. e., unnatural, or artificial.

By approving of the term "physiologic therapeutics," we, therefore, admit the existence of other therapeutic methods and means, which may be termed "unphysiologic."

The difference between these two may be expressed in the following definitions which, though, are not meant to be conclusive.

So much depends upon the physician's personal views.

Physiologic therapeutics being based on the fundamental principle that the patient's vital force, the *vis medicatrix naturae*, is the omnipotent curative power, embraces all those means the beneficial effect of which on the entire organic and cellular action is scientifically proven and acknowledged.

For instance, we not only know that a properly applied Sitz bath is apt to produce sleep, but we also know why it does.

Unphysiologic therapeutics, on the other hand, manipulate with means which are known to produce certain desired effects, the biologic and physical action of which, though, is not fully known and which we, therefore, employ more or less empirically.

For this reason internal medication, to a great extent, is to be classed under the unphysiologic therapeutics.

Apart from their symptomatic effect we know very little about the action of drugs.

Their absence in the eliminations of the body proves that they

have undergone chemical changes the effect of which upon the cellular life is not known to us.

Furthermore, how can we tell where their so-called physiologic action ceases and their toxic action begins? From the appearance of toxic symptoms? This reminds me of the midwife who, when asked how she could tell whether the baby's bathing water was too cold or too warm, replied that if the child after being placed in the bath turned blue, the water was too cold, and if it turned red, the bath was too hot.

What of the proper dose? As little as we know how much alcohol a person may imbibe before he or she becomes intoxicated, how many cigars a man may smoke before he develops heart symptoms, how long a woman may indulge in coffee drinking before she becomes nervous, as little can we tell the proper dose of a drug for a certain individual. Even the same individual may be more or less susceptible to the same dose at various times. To judge by the age and physical condition of the patient may be very deceiving.

The above reasons should be sufficient to warn us against the misuse of drugs. Their effect is not curative, but merely symptomatic, and even their symptomatic action may have and probably has a disturbing effect upon the cell action, which fact we often do not take into consideration.

In acute diseases we can get along pretty well without them, and in chronic diseases they are not of much avail, as far as the cure of the patient is concerned, unless we combine them with physiologic therapeutics which will do the work.

What we can accomplish with physiologic therapeutics is shown by the results obtained by the modern treatment of tuberculosis. No more creosote, but pure air, good food and a regulated mode of life! By these simple means, which represent only a part of the physiologic therapeutics, we are able to cure tuberculosis, if it is curable at all, not by destroying the tubercle bacillus, but by invigorating the patient's vital power.

And the same results are obtainable in most curable chronic diseases. There is no essential difference between the treatment of tuberculosis and that of any other chronic disease. It is not the kind, but the character of the disease and the individual condition of the patient, which determine the mode of application of the therapeutic method. We must not treat sicknesses, but sick people. Although two people are afflicted with the same disease, the treatment which in principle is the same for both, may differ widely in its application.

As there is only one curative method in all chronic diseases, there is only one in acute diseases. There is no fundamental difference between the treatment of typhus and that of other acute diseases.

Whoever employs the so-called Brand method in typhus and not in pneumonia, or scarlet fever, or smallpox, acute rheumatism, etc., has not grasped the underlying principle of the hydropathic treatment of fever diseases. The purpose of the Brand treatment is not the reduction of the patient's temperature, but the invigoration of the vital power. I wish to emphasize that "physiologic" therapeutics must not be confounded with "rational" therapeutics.

A therapeutic means may be physiologic per se, and yet in its application it may be irrational, and vice versa.

For instance, the dieting of a typhus patient by feeding him so and so many ounces of milk every so and so many hours is absolutely irrational.

There is no doubt in my mind that a routine diet, by depriving the patient of necessary food elements, is a frequent cause of collapse.

In the same manner as the improper application of a physiologic treatment is irrational, an unphysiologic treatment may be rational, if properly applied.

If I wish to help a patient over a temporary sleeplessness, a dose of veronal is rational, while the treatment of habitual insomnia with medication is highly irrational.

It is a pity that the irrational use of drugs is yet so widespread and that we do not make more extensive use of physiologic therapeutics.

How much better our results would be! And how much truer we would be to ourselves, if we would abolish the old "teaspoon" method, with all its illusions and deceptions. But, alas, as long as our pharmacopea equals the Bible in size, the prospects are not good.

32 NORTH STATE STREET.

THE AUDITORY APPARATUS IN THE HEN.

By JOHN C. WARBRICK, M. D., CHICAGO.

The opening into the auditory meatus is small, circular in shape and surrounded by numerous minute feathers which project inwards from the circumference, covering it completely so that it can not be seen in any way from the outside. A loose fold of skin, circular in shape, surrounds it, and from this the evenly arranged and minute feathers project to the center of the opening so as to cover it. This fold of skin passes down into the meatus as a lax membrane and forms its lining.

On the outside of the head there is no projection of any kind formed to mark the entrance to the ear, as is the case in many animals, but it lies almost flat at the back part where the head is broadest, being covered with feathers. It extends downwards, inwards and backwards, bulging out some to form a wider space as if to make a mastoid process. At the lower part of the opening a pod of fat is formed, triangular in shape, having the apex upwards and the base downwards. A tough ligamentous membrane forms a protective covering to the back part of the ear, while a strong ligament stretches across the lower part which serves to give it strength. As in the turkey, an arm of the upper jaw runs up in front of the ear and thus forms a strong protection to the tympanic membrane. This is a single layer of tissue, very thin and transparent, being somewhat oval in shape and not far from the entrance. It is larger from above down than from before backwards, while it extends from above obliquely downwards, forwards and inwards, measuring about one-quarter of an inch from above down and less than that from before back.

The membrane is attached to the adjoining bones, which on the inner side at the upper and back part seem to form a buttress for it, being strong and thick and running transversely. From part of this buttress there projects a short minute spick of bone, almost as fine as the point of a needle. This extends to the center of the delicate membrane and seems to correspond to the malleous. Extending obliquely forwards, downwards and inwards from the lower front part of the membrane is a funnel shaped passage, which ends in the cancellous tissue and forms the Eustachian tube. Above this, and running through the cancellous tissue in different directions, are thickened

pieces of bone which curve and adjoin, while other parts are hollowed out into small spaces.

Under the microscope the structure of the tympanic membrane has a resemblance to the formation of a rug or carpet, being interwoven with numerous strands running longitudinally close together, some of them interwoven with numerous strands running longitudinally close together, some branching, while others cross them transversely, and all of them seeming to be bathed in a pulpy watery-like substance as they interlace.

THE CHICAGO MEDICAL RECORDER

AND
JOURNAL OF THE MEDICO-LEGAL SOCIETY
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Editorial.

CHURCH AND STATE.

Senator John D. Works, of California, on April 29 and 30, 1912, delivered an address to the Senate of the United States ostensibly in opposition to the Owens bill to create a National Department of Health, but in fact the address is an argument intended to engraft upon the minds of senators the views of the Christian Science religion, and, so far as possible, to commit the senate to that religious doctrine. No Roman Catholic, or Episcopalian, or Methodist, or Presbyterian, or Baptist, or Jew, or any other religionist would dare do such a thing.

Senator Work pretends to think a National Department of Health would create a state medicine and would work to the exclusion of all but regularly educated practitioners from treating the sick. Senator Works knows better. The regulation of the practice of medicine comes from the police power, and this power has never been delegated by the states to the federal government but is re-

served by them and is exercised by them and them alone. What Senator Works desires is a union of the Christian Science religion, with its healing pretensions and all, with the government.

The aim of the science of medicine is and has been from the beginning to prevent disease and premature death. This branch of medicine has done an enormous work in this line. Many diseases in former times claimed thousands of human victims in a year, and if history is to be believed some plagues counted their victims by millions. To further the work of disease prevention is the purpose sought by those who would create a National Department of Health, and there is no other purpose. Senator Works has placed himself squarely in opposition to this humane purpose. On the curative side of medicine, diseases that formerly were fatal are now in many instances cured or rendered harmless. Senator Works' ideas, if carried to their full fruition, would nullify even this boon to suffering humanity.

Medicine is not concerned over the loss of practice because of the various isms, whether educated in the art of healing or not, for truth will always prevail. Medicine is concerned over the suffering and death that may come to the ailing who fall into untrained or empirical hands.

THE SANE FOURTH.

Chicago has observed a fourth of July celebration this year without noise and without a death due to explosives. The day was sanely observed as a day of rest and recreation. The public parks were literally filled with people, young and old, all day long enjoying the green grass and the pure air.

It is only a few years since the agitation was begun looking to a sane observation of the fourth of July, and the final success of the effort throughout the country this year demonstrates how easy it is to educate the public and restrain foolhardiness when the subject is approached with intelligence. The Department of Health of Chicago, the Journal of the American Medical Association, and individual medical men were in the movement from the first, but the persistent publicity given the cause by the Chicago Tribune was the leading factor in the good work in Chicago.

The success of the work for a "sane fourth" gives promise to other work necessary for the prevention of sickness and premature death that has been pointed out repeatedly by medical men. The public is gradually becoming interested in every phase of that great

question. It is only through the wholesale education of the masses that success will finally come, and this outlines the opportunities of the daily press and other agencies that reach the public.

RAT EXTERMINATION.

Bubonic plague has made its appearance in Porto Rico and in Cuba. A move has been made in New York City looking toward the destruction of wharf rats and their examination for evidence of plague infection and quarantine has been established at southern ports.

Every port in the country should have a permanent corps of rat exterminators. Rats do not travel by railway trains, hence interior cities are not in so much danger from rat-borne bubonic plague. Rats are an intolerable and costly nuisance everywhere and should be exterminated.

THE "COME BACK FARM."

Professor Charles R. Henderson, of the University of Chicago, has planned a farm as a means of rescue for the "down and out." In cities men who are incapacitated through age, disease, or lack of faculty are sufficiently numerous to be a general burden. A farm where they may do such work in the open as they are capable of, receiving in return proper nourishing food and respectable shelter, is the most rational and we think the cheapest means that has been proposed for the amelioration of these unfortunates. It should appeal to every medical man especially, for he knows their need.

Professor Henderson is always at the front in considering the welfare of society. We heartily endorse this new move of his and hope he will be successful in getting it established.

THE POLITICAL CONVENTIONS.

National conventions of every kind are always interesting. The Republican national convention held last month in Chicago for the purpose of nominating candidates for the presidency and vice-presidency and placing them upon a platform of party principles, and the national convention of the Democratic party held for the same purpose in Baltimore, were each of surpassing interest. The main contention in each convention was between the progressives, who advocate new, advanced, and sometimes radical measures for public relief, and the conservatives or stand-pat faction, who be-

lieve in the old way of leaving well enough alone or of progressing slowly. The progressives in both parties had the unorganized people behind them, while the conservatives or reactionaries were encamped behind organized political forces or bosses, as they are sometimes not inaptly called. The progressives in each party had a leader of heroic figure as their champion, and each convention had a small majority on the side of the bosses to start with.

Ex-president Roosevelt was the champion of the progressive cause in the Republican convention. He had received a large majority of the primary vote in the states where that vote was taken for president, but he was not personally a delegate and could not work from the floor of the convention. He is the idol of his faction and has large popularity among the masses. He undoubtedly is a great natural leader of men, but he has used his unique power of vituperative denunciation of those who disagree with him and this has lost him friends. It also appears that he is not equipped by temperament for the highest type of statesmanship in the broad sense of the word. He lost his battle for the nomination and President Taft was nominated for a second term. There is no possible doubt that President Taft would have been defeated for the nomination were he not in office, with control of delegates through official patronage.

In the Democratic national convention the progressive element in the party had as a delegate to champion their cause, William Jennings Bryan, thrice the party's candidate for the presidency. The bosses or reactionary element evidently intended to nominate one of their kind and defeated Mr. Bryan for the temporary chairmanship, but it was no sooner over that they saw their mistake and tried to console him. Being a delegate, Mr. Bryan found frequent opportunity to frustrate all reactionary schemes by gaining a hearing and stating his facts in plain language, and driving his truths home by the power of his logic and his matchless eloquence. He finally brought about the nomination of Mr. Woodrow Wilson, governor of New Jersey. The nomination of Governor Marshall of Indiana for vice-president was natural, as his delegate strength for president was the first thrown to Mr. Wilson in the long drawn out balloting.

Mr. Bryan gave the country a new and happy view of his character and his strength, and he has gained in popularity immeasurably among those who formerly opposed him. He stands out today the most striking figure in the history of his time and we wish him long years of life and usefulness to his country.

Book Reviews

GEMS FROM THE LITERARY WORK OF DR. NICHOLAS SENN. Compiled by Lucy Waite, M. D. Published under the auspices of The Nicholas Senn Club. Chicago.

If this Club had accomplished nothing further than the publication of these literary gems of the late Nicholas Senn, it would have been sufficient justification for its existence. Nowhere in literature have we been more deeply impressed than with the sublime thoughts, the beauty of diction, the lofty sentiment as expressed by the great Nicholas Senn. This book contains gems and nothing but gems, therefore we would have to quote the entire work to do it justice, but who can read "An Evening in Tahiti," "The Dying Cedar," "Greenland," "Siberia's Trees and Flowers," without being again impressed with the wonderful gifts of this genius, the immortal master, Nicholas Senn.

DUODENAL ULCER. By B. G. A. Moynihan, M. S. (London), F. R. C. S., Senior Assistant Surgeon at Leeds General Infirmary, England. Second edition, enlarged. Octavo of 486 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$5.00, net; half morocco, \$6.50, net.

Moynihan's Duodenal Ulcer is a masterpiece of bookmaking. It presents the latest achievements of surgery in a simple and concise literary form, and is a model of the publishers art. The second edition is brought up to date by a satisfying exposition of the differential diagnosis of duodenal ulcer and the results of X-ray examination of the stomach after the administration of bismuth, as well as of some other minor detail. The reputation of the first edition and incidentally that of the author is maintained by this edition, and the only opinion that we can give is that every abdominal surgeon should have it in his library and should study it carefully. Those whose experience is not great enough to give them individual authority can do no better than follow its teachings with implicit confidence.

ESSAYS ON GENITO-URINARY SUBJECTS. By J. Bayard Clark, M. D., Assistant Genitourinary Surgeon to Bellevue Hospital, Consulting Genitourinary Surgeon to the Elizabeth General Hospital, Fellow of the New York Academy of Medicine, etc. New York: William Wood & Company. 1912. Price, \$1.25 net.

This interesting book consists of a series of essays, of which some have been read before different medical societies and have appeared in

print. The author has brought the topics treated up to date, has written a few new chapters, and in this compact shape presents the subject matter in a most convenient and useful form. It is a most readable book, full of good common sense and of sound advice. We may mention among some of the interesting chapters, gonococcic infections and the physician's responsibility; gonorrheal prostatitis; the gonococcus; comparative value of some urethral and other germicides; on what is new in genito-urinary surgery, endorsing the intravesical treatment of papillomata of the bladder by the high frequency current spark, etc. The whole book shows careful study and broad experience.

SURGICAL AFTER-TREATMENT. By L. R. G. Crandon, M. D., Assistant in Surgery at Harvard Medical School, and Albert Ehrenfried, M. D., Assistant in Anatomy at Harvard Medical School. Second edition, practically rewritten. Octavo of 831 pages, with 264 original illustrations. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$6.00 net; half morocco, \$7.50 net.

This is a most efficient work, indispensable to every medical student, interne and general practitioner. It treats in a most thorough manner of surgical convalescence, what to do and what not to do. The book is splendidly illustrated, the text is clear and concise, and we can well understand its great popularity. This edition has been thoroughly revised and some chapters have been entirely rewritten.

Part I deals, among other subjects, with "After the anesthetic," nausea and vomiting, pain and sleep, postoperative hemorrhage, shock, coma, artificial respiration, diet after operation, rectal feeding, lavage, catheter fever, care of bowels, bursting of the abdominal wound, sequelae of anesthesia, hiccough, bandaging, treatment of septic wounds, rare complications after operations, foreign bodies left in abdominal cavity, artificial limbs, preparation of the patient, etc.

Part II treats of operations in detail and their after care, with concluding chapters on therapeutic immunization and vaccine therapy, Coley serum for malignant tumors, and an appendix of invalid and convalescent food recipes.

This will give our readers an idea of the scope of this book, which we consider one of the books which no man can afford to be without who has the slightest interest in surgical knowledge or the intelligent "after-treatment" of surgical cases.

SEXUAL IMPOTENCE. By Victor G. Veeki, M. D., Consulting Genito-Urinary Surgeon to the Mount Zion Hospital, San Francisco. Fourth edition, enlarged. 12mo. of 394 pages. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$2.25 net.

We are glad to see the fourth edition of this work, which treats on the subject in a common sense way, giving it the rational consideration it deserves. In this edition the author reflects the progress made in urology, by modifications and changes in the treatment of sexual impotence. The author does not hesitate to condemn certain things which have been highly extolled, advocating instead hydrotherapeutic measures, proper hygiene, sane living, etc. We cordially commend this book to the general practitioner who sees so many sexual neurasthenics.

LABORATORY METHODS. With Special Reference to the Needs of the General Practitioner. By B. G. R. Williams, M. D., Member of Illinois State Medical Society, American Medical Association, etc. Assisted by E. G. C. Williams, M. D., formerly Pathologist of North Michigan Hospital for the Insane, Traverse City, Michigan. With an Introduction by Victor C. Vaughan, M. D., LL. D., Professor of Hygiene and Physiological Chemistry and Dean of the Department of Medicine and Surgery, University of Michigan, Ann Arbor, Mich. Illustrated with forty-three engravings. St. Louis: C. V. Mosby Company. 1912.

Special attention is called to the fact that in this book the authors have striven to make practicability the chief purpose of the work. They have endeavored to give the student and the country practitioner those methods by which they will get results in laboratory work. They have striven to remove from the mind of the general practitioner the idea that he cannot do laboratory work himself because he has no expensive laboratory equipment.

Introductory chapters on laboratory methods and equipment are followed by well written and illustrated chapters on the sputum, searching for germs, vascular drains, detection of common poisons, the urine in disease, milk and its home modification, technic of private postmortems, indications for laboratory aid, etc. The book is sure to attain a well deserved popularity.

INFANT FEEDING. By Clifford G. Grulee, A. M., M. D., Assistant Professor of Pediatrics at Rush Medical College, Attending Pediatrician to Cook County Hospital. Octavo of 295 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$3.00 net.

This volume should supply a long felt want to those practitioners and students of medicine who have been looking for a short but comprehensive treatise on infant feeding, with special reference to the caloric method. The author places clearly and concisely before the reader facts and figures intending to show the many advantages of this system of infant feeding over the so-called percentage method, with its complex formulæ and algebraic quotations, which to the inexperienced only tend to puzzle and confuse.

The many problems to be confronted in the management of breast or bottle-fed babies, and the various pathological conditions seen in infants under one year of age have all received careful attention. The methods of treatment, based on the author's experience in a large hospital and in private practice, will prove invaluable aids not only as to the question of feeding but in the proper diagnosis and treatment. The book is liberally illustrated with many original photographs and colored plates, which greatly add to its value.

CHILE AND HER PEOPLE OF TODAY. By Nevin O. Winter, Author of "Mexico and Her People of Today," "Guatemala and Her People of Today," "Brazil and Her People of Today," "Argentina and Her People of Today." Illustrated from Original and Selected. Photographs by the Author. Boston: L. C. Page & Company. 1912. Price, \$3.00.

An account of the customs, characteristics, amusements, history and advancement of the Chileans and the development and resources of their country. This new book on Chile comes from the press at a time when the interest of North Americans in South American republics is keenly awakened. A few chapters are given to history and description of this prosperous country, but the newest and most interesting matter is in the chapters on commercial and agricultural interests, and these are up to date and engrossing. The book is so entertaining and reliable that one regrets that the illustrations do not do justice to the subjects or the text.

DIE GESUNDHEITSKONTROLLE DURCH DEN ORGANSINN. Für Gebildete Verständlich Dargestellt von Privatdozent Dr. Anton Brosch, K. U. K. Stabsarzt, Ordentliches Mitglied des Militärsanitäts-Komitees, Lehrer an der Militärärztlichen Applikationsschule und Prosektor am Militärleichenhof in Wien. Unter Mitwirkung von Dr. Otto von Aufschnaiter, Chefarzt und Direktor der "Sanatorium und Kuranstalten Baden B. Wien A. G." Zweite, Vermehrte Auflage. Leipzig und Wien: Franz Deuticke. 1912. Price, 50 cents.

We commend this pamphlet written by the inventor of the Entero-

cleaner and intended to convey to the intelligent laity the importance of proper attention to the bowels. This is the second edition in the German language, and we hope to see an English edition, as it is worthy of wider circulation. The author demonstrates the various conditions which lead to autointoxication, the physical and mental symptoms produced, and the treatment by means of the Enterocleaner and other hygienic measures.

MANUAL OF STYLE. A Compilation of Typographical Rules Governing the publications of the University of Chicago, with Specimens of Types Used at the University Press. 268 pages, 12 mo., paper; postpaid, 85 cents. Bound in cloth, postpaid, \$1.12. The University of Chicago Press, Chicago, Ill.

This book was originally prepared for private use in the editorial offices of the University of Chicago in connection with the official printing and publications issued from the University Press. It has been added to, revised and enlarged from year to year as new opportunities or necessities arose, and in response to a general public demand for such a manual. It is now in its third edition and has been adopted for use in many editorial offices, libraries, proofrooms, throughout the United States and Canada. Everybody who is called on to prepare manuscript for publication will appreciate the value of a concise, practical set of working rules governing questions of typographical style.

There are chapters on capitalization, the use of italics, quotations, spelling, punctuation, division, footnotes indexing and tabular work. These rules of composition are followed by a brief explanation of the technical terms used in printing. The appendix contains hints to authors and editors, to proofreaders and to copyholders, as well as a list of proofreader's marks. Specimen pages are also given of the various types that are available.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by H. A. Hare, Professor of Therapeutics and Materia Medica, Jefferson Medical College; and Leighton F. Appleman, Instructor in Therapeutics, Jefferson Medical College. June, 1912. Volume XIV, No. 2. Philadelphia: Lea and Febiger.

This issue of Progressive Medicine contains the usual collection of reports upon several different departments of medicine. They show the same thorough investigation, complete collection from all sources, scholarly selection and editing that have always

characterized this standard publication. This number contains the subjects of "Hernia" by William B. Coley; "Surgery of the Abdomen" by John C. A. Gerster; "Gynecology," John G. Clark; "Diseases of the Blood," "Diathetic and Metabolic Diseases," and "Diseases of the Thyroid, Nutrition, and the Lymphatic System" by Alfred Stengel; "Ophthalmology" by Edward Jackson; the volume being completed by a carefully prepared index.

The thoroughness and completeness of investigation, the reliability of its editing, together with the form in which this annual is issued, renders it indispensable in every research or investigation, but also makes it one of the easiest of means for keeping thoroughly abreast of all advances in scientific practical medicine.

FALSE MODESTY. That Protects Vice by Ignorance. By Dr. E. B. Lowry, Author of "Truths," "Confidences," "Herself," etc. Chicago; Forbes & Company. 1912. Price, 50c.

Here is further evidence of the progressive march of the times. The number of books of this character now being issued is indicative of the interest very generally taken in these matters by thinking people. Dr. Lowry's book is a special plea for education of the masses, the instruction of youth in matters pertaining to sex. It goes deeply into the reasons why this enlightenment is necessary, showing that in the ignorance and secrecy surrounding this subject lies the fundamental cause of much of the immorality, unhappiness and misery of life. The subject is a hard one to write upon but Dr. Lowry has handled it in a most clear, concise, open way, yet with such delicacy that the esthetic sense of the most refined need never for a moment be offended. It is a book that can be placed in the hands of anyone—mother, guardian, or teacher. To all who have young people under their guidance, the advice and suggestions contained in this book will be invaluable.

THE MONTESSORI METHOD. Scientific Pedagogy, as Applied to Child Education in "The Children's Houses," With Additions and Revisions by the Author. Translated from the Italian by Anne E. George. With an Introduction by Professor Henry W. Holmes of Harvard University. With Thirty-two Illustrations from Photographs. Second Edition. New York: Frederick A. Stokes Company. Price, \$1.75.

This book is a collection of articles or series of chapters describing and expounding the Montessori method in dealing with the subject of child education. The method is new enough in this coun-

try to be entering upon the fiercely controversial stage and is as yet not generally understood, but the importance of the subject makes it of universal interest and compels a careful study. Medical men generally know of the great advance that has been made in the training of degenerates—feeble minded children—by the use of this system of training, and it remains to be decided whether the substitution of it for the method now in vogue in the education of normal children will be equally satisfactory. The book is one greatly needed by all engaged in child study, child education, the training of defectives, and generally by all interested in the children of the present or the men and women of the future.

BOOKS AND PAMPHLETS RECEIVED.

DIGEST OF COMMENTS ON THE PHARMACOPOEIA OF THE UNITED STATES OF AMERICA. (Eighth Decennial Revision) and on the National Formulary (Third Edition). For the Calendar Year Ending December 31, 1910. By Murray Galt Motter and Martin I. Wilbert. Washington: Government Printing Office. 1912.

SEMI-ANNUAL REPORT OF SCHIMMEL & Co. (Fritzsche Brothers). Miltitz near Leipzig, London, New York. April, 1912.

REPORT OF THE COMMISSION ON MILK STANDARDS APPOINTED BY THE NEW YORK MILK COMMITTEE. Washington: Government Printing Office. 1912.

THE ELIMINATION OF CAFFEIN. An Experimental Study on Herbivora and Carnivora. By William Salant, Chief Pharmacological Laboratory, Division of Drugs, and J. B. Rieger, Assistant Chemist. Washington: Government Printing Office. 1912.

SEWAGE POLLUTION OF INTERSTATE AND INTERNATIONAL WATERS. With Special Reference to the Spread of Typhoid Fever. By Allan J. McLaughlin. Hygienic Laboratory Bulletin No. 83. March, 1912. Washington: Government Printing Office.

SIXTH ANNUAL REPORT OF THE HENRY PHIPPS INSTITUTE. February 1, 1908, to February 1, 1910. Published by the Henry Phipps Institute, 238 Pine Street, Philadelphia. 1912.

News Items

For Rent.—Large room with private exit in choice private suite. Inquire 1010 Stewart building.

X-Ray Laboratory.—Dr. Adolph Hartung desires to announce that his X-Ray Laboratory in the Columbus Memorial building, room 1311, 31 North State street, will hereafter be open from 9 a. m. to 5 p. m. Telephone, Central 4921.

Wanted.—Young medical student or doctor to correspond with us about a new way of money and friends making in the health and efficiency promoting line. Address Geo. A. Schmidt (IT) Co., 236-238 North avenue, Chicago. Established 1875.

Honorary Degree Conferred.—At the eighty-first annual commencement of Wesleyan University at Middletown, Conn., held on June 19th, the degree of doctor of laws was conferred upon Dr. Amos J. Givens, proprietor of Givens Sanitarium for nervous diseases at Stamford, Conn.

Honors for Dr. Gorgas.—The American Medicine Gold Medal award for 1912 has been conferred upon Dr. William C. Gorgas, Ancon, Panama. In the judgment of the trustees—William J. Robinson, Claude L. Wheeler, and H. Edwin Lewis—Dr. Gorgas has performed the most conspicuous and noteworthy service in the domain of medicine during the past year.

Fire Extinguisher. An excellent new device has been perfected by the Pyrene Company of Illinois, 29 So. La Salle Street, this city. A small gun-shaped container holding a brown gaseous liquid can be shot at any blaze and instantly smother it. The liquid may be squirted through the radiator of an auto, for instance, should the carburetor catch fire, without lifting the engine hood. The great advantage of this over the powder device can easily be seen. Every doctor should have one ready in his car.

Vacancy at Massachusetts Charitable Eye and Ear Infirmary.—There is a vacancy in the Aural House Staff at this institution. The service in the Aural Department is of eighteen months' duration, with residence in the hospital during the last twelve months.

The number of patients treated in the wards last year was 3,449; 1,700 eye, 1,749 ear. The number of new out-patients was 29,875. The total out-patient attendance was 61,641. By these figures some idea can be obtained of the clinical opportunities offered.

Application should be made at once to the superintendent of the hospital: Farrar Cobb, M. D., Superintendent, 233 Charles Street, Boston, Mass.

Removal Notices.—Dr. D'Orsay Hecht announces the removal of his office to suite 909, 104 South Michigan Avenue. Hours 9:30 a. m. to 12:30 p. m. Telephone Randolph 5831.

Dr. J. P. Webster has removed from 6427 Stewart avenue to 6332 Normal boulevard. Telephone Wentworth 717.

Dr. I. A. Abt has moved his office from 32 North State street to the Monroe building, 104 South Michigan avenue. Telephone Randolph 5831.

The Bismarck Garden.—During the summer season we suggest to every physician that he make a point of spending at least one evening a week at that delightful summer garden on the North Side, the Bismarck.

There is nothing more refreshing during the warm weather, when theaters are hot and stuffy, than to sit in beautiful outdoor surroundings like these, listening to high class music and entertainment such as is always provided by the Bismarck Garden. By leaving one's name at the office, any physician may be assured that important telephone messages will reach him at any time, as the management make a special effort to see that such calls are attended to immediately.

Society of Anesthetists.—On June 6th, at Atlantic City, during the meeting of the American Medical Association and following a symposium on anesthesia, the National Society of Anesthetists was organized. Prof. Yandel Henderson of Yale, chairman of the commission on anesthesia of the A. M. A., occupying the chair. Those assembled for the symposium, acting as a committee of the whole, proceeded to organization and elected the following officers for the year 1912-1913: President, James T. Gwathmey of New York; vice-presidents, Charles M. Teter of Cleveland, F. H. McMechan of Cincinnati, Yandel Henderson of New Haven; secretary, William C. Woolsey, 88 Lafayette avenue, Brooklyn; treasurer, Harold A. Sanders of Brooklyn.

The constitution and by-laws were ordered to be drawn by the executive committee and submitted to the society at its next meeting for adoption; all names submitted for membership, if qualified in the estimation of the executive committee, shall be considered as charter members if presented within a period of sixty days and accompanied by the levied due of three dollars.

The National Society of Anesthetists in this notice calls all those who are actively interested in this work to join its ranks and assist in developing the subject of anesthesia to greater perfection and more uniform safety.

Ottawa Tuberculosis Colony.—This institution is one tangible result of the campaign against the spread of pulmonary tuberculosis inaugurated by the Illinois State Medical Society in 1904. Dr. J. W. Petit, its founder and still its director, was pledged the moral support and encouragement of many of the representative physicians who constitute the membership of that society. The colony was opened in July, 1904, with two patients. Its growth since that time has been steady.

The facilities of this colony have now been extended so as to include the treatment of closed and surgical tuberculosis. A hospital building has been erected, especially constructed to apply the open air treatment to this class of cases according to advanced methods. The rooms are en suite, each being provided with a steam heated dressing

room, hot and cold running water, toilet, shower bath, open air sleeping room and sleeping porch. A well equipped operating room, surgical assistants, anesthetist, surgical nurses, and laboratory will be at the disposal of surgeons who desire to operate or make use of the special facilities for the after care of tuberculous cases; such post-operative treatment will be under the direction of the surgeon.

An industrial department (practically a separate institution) has been added for patients who cannot afford the higher rates of the main sanatorium, and for whom a flat rate of \$14.00 per week has been made. This is secured by donating the services of the medical, laboratory and administrative staff, and eliminating the non-essentials. This department is intended for ambulatory cases only.

The main sanatorium, which provides for those who can afford a more elaborate equipment and service will continue to operate on the same basis as in the past. A special effort is made to have this department attractive.

The colony now has a Chicago office at room 910 Columbus Memorial building, where Dr. Petit may be consulted from 10 a. m. to 12 m., Mondays and Thursdays.

New Location.—MacGregor & Johnson, the specialists in orthopedic and scientific massage, have moved from the Dexter building into larger and more fully equipped quarters in the Mallers building, suite 1002.

Election of Officers.—The Chicago Medical Society elected the following officers June 18: President, Dr. Jacob Frank; secretary, Dr. P. J. H. Farrell. The Chicago Medical Woman's Club elected the following officers June 12: President, Dr. Effie L. Lodbell; secretary, Dr. Sadie May Adair.

Contamination of Rural Atmospheres. Professor Robert Fletcher, of the State Board of Health of New Hampshire, presents some interesting and not irrelevant considerations of dust. "We all know that the gross impurity of the air in our cities," notes Professor Fletcher, "is due to the fact that not only has it been breathed already by 'three men and a horse,' but that it is filled with atomic dust consisting of soot, abraded mineral matter from stones, bricks, steel rails, etc., from animal and many other kinds of organic filth, besides germs of disease, abominable tobacco smoke and the residuum of vile-smelling fumes from many automobiles. This constitutes the pall, visible many miles away, which hangs over all large cities and communities." The storm is of incalculable value in sweeping away these evil conditions and substituting clarified air. The air of mountain and seashore, which so many seek, is beneficial just to the extent that it is free from the contaminating conditions just described. But with the increasing number going to resorts, the universal invasion by fuming, dust-raising autos, the health-giving conditions sought are much impaired and may even become hypothetical. The benefits gained by sleeping outdoors, camp-

ing out in the country, etc., are chiefly due to getting away from dust-laden or otherwise impure air. This is a rather novel view of what might be termed the contamination of the rural air, and the point is a pertinent one in that the State of the writer is one that derives much revenue from its resorts whose claim besides delightful scenery is the quality of the mountain air.

What Money Can Buy.—Advice, bonds, companionship, divorces, ease, form, governments, houses, indigestion, jewelry, kirks, lies, minions, navies, ostentation, politicians, queens, religion, sacraments, travel underwriters, vulgarity, wines, you (?).

What Money Cannot Buy.—Ancestry, bliss, children, devotion, equality, friendship, gratitude, health, illusion, joy, kindness, love, mind, nature, originality, peace, quiet, respect, sincerity, time understanding, virtue, wisdom, youth.

THE CHICAGO MEDICAL RECORDER

AUGUST, 1912.

Original Articles.

THE SURGICAL TREATMENT OF TRACHOMA*.

(Illustrated.)

By CASEY WOOD, M. D., CHICAGO.

I.

Full justice to my subject might be done if I were simply to advise the study in detail of the most complete exposition of it so far published, viz: the chapter by Dr. John Green, Jr., in Wood's "*System of Ophthalmic Operations*." However, as the attitude of the individual operator—myself for example—towards the procedures there laid down and the actual expression of it at the moment may have some value and interest I shall proceed as if the monograph just referred to had never been written and I had not expressed my indebtedness to its author for much of the text and several of the illustrations I propose bringing to your attention.¹

At the outset one cannot escape a preliminary discussion, even though it be as brief as possible, of the essential characters of the disease known as trachoma, and it would also be well to refresh our memory regarding the ocular tissues involved in the disease.

Probably the following definition, which I have given elsewhere,² may be sufficient to characterize this pathological condition:

Trachoma is a very serious, contagious, intractable and destructive disease of the eye, characterized by the formation of minute nodular growths

*Two lectures delivered in the Postgraduate Course of the University of Colorado, Denver, July 26, 1912.

¹Most of the matter treating of the non-operative conduct of trachoma is abstracted from Wood's "*System of Ophthalmic Therapeutics*."

²Commoner Diseases of the Eye, Wood and Woodruff, 3rd Ed., p. 247.

(granulations) in the conjunctiva which in time become absorbed, leaving cicatrices to mark the site of the new growths.

The recent form of the disease exhibits great swelling and injection of that portion of the membrane covering the globe, in which case the enlarged papillæ may be hidden by the swollen tissues. It is usually accompanied by discharge that is sometimes purulent in character. Ulcers, from infection, may form on the cornea, when lachrymation, pain and photophobia are prominent symptoms.

The chronic form of trachoma is more frequently met with and may set in without any marked discomfort, the patient complaining of nothing more distressing than itching, foreign body sensations or a slight smarting of the lids, these symptoms being aggravated when the eyes are exposed to wind, dust or prolonged use.

As the disease advances the symptoms gradually become more pronounced. On everting the lids their conjunctival surfaces will be found covered with a number of irregularly scattered granulations, more abundant in the upper lid and particularly in the retro-tarsal folds. These granulations are grayish-white, somewhat resembling sago grains, are embedded in the conjunctiva and project above its surface.

The base of the granulation consists of connective tissue which eventually constitutes the cicatricial degeneration of the conjunctiva and indicates its locality. The disease, in the course of months or years, finally involves the tarsal cartilage, the granulations disappear and deformity of the lids is a frequent result. This is due to cicatricial contractions, producing entropion. The bulbs of the eyelashes become affected, so that they grow irregularly and trichiasis results. After this atrophy of the granulations, the under surface of the lids again becomes smooth, but is shiny and intersected by a number of whitish lines showing where the conjunctiva has been replaced by connective tissue.

Other complications not infrequently arise. The ocular conjunctiva becomes congested and a vascular condition of the cornea occurs, bringing about a condition called pannus, which is nothing more or less than the extension of the trachoma to the cornea. The upper portion of the cornea is generally the first to suffer and is covered with vessels derived from the conjunctiva, which run between the epithelial layer and Bowman's membrane. The portion of the cornea affected is usually covered with a diffuse opacity, which may clear up entirely if the course of the disease is arrested.

For some years past I have been in the habit of classifying trachoma after the plan of my friend MacCallan, Chief Inspector of Ophthalmic Hospitals in Egypt, beginning with trachoma I as repre-

senting the very earliest stage of the infection to trachoma IV representing the final or cured stage of the disease.

"In trachoma I there is found on the conjunctiva of the tarsus and superior cul-de-sac, especially at the two extremities of the tarsus, slight roughnesses, forming grayish or grayish-yellow islands which are semi-transparent and almost avascular, with small blood vessels converging towards them. These roughnesses generally resemble grains of sago. There may or may not be a mucous discharge.

"The simple form lasts a variable time, sometimes as long as a year, but after the development to a certain degree of the granulations the conjunctiva becomes more vulnerable, and complications with a species of conjunctivitis other than trachoma usually occur.

"This form may pass into trachoma II, or, in favorable cases or cases which have been treated, into trachoma III or IV.

"Trachoma II.—In trachoma II, there is usually a discharge and it is in this stage that the disease is especially infective. It is the stage in which granulations are numerous and large, or in which a papillary hypertrophy is present. It may be divided in the above sense into trachoma IIa and trachoma IIb.

"Trachoma IIa.—Gelatinous granules are present all over the tarsi and in the upper fornix. In some cases the individual granulations can no longer be distinguished, they fuse into tumor-like masses or merge into a general infiltration, the tissue assuming a peculiar glassy, gelatinous appearance.

"Trachoma IIb.—There is formation and hypertrophy of pseudo-papillæ consisting in red-raspberry-like elevations which mask more or less the typical gelatinous granules. This papillary form, as it is called, is especially marked on the upper tarsus. This form may be mistaken for spring catarrh and for a condition occurring as the result of any long-continued irritation or of a protracted attack of purulent ophthalmia in a non-trachomatous eye.

"Trachoma III.—In this stage cicatrization has definitely begun, and is more or less advanced. Islands of inflamed conjunctiva or of trachomatous granules are seen to be surrounded by a network of fine lines of connective tissue. It is in this stage that necrosis often results from the pressure of the shrinking connective tissue (post-trachomatous degeneration). The necrotic tissue may become calcareous. The cicatrization, which is typical of this stage, is generally supposed to be pathognomonic of trachoma.

"Trachoma IV.—This is a condition in which there is a smooth conjunctiva seamed by white lines of connective tissue. This is the stage of practically complete cicatrization of the conjunctiva, or of 'cured' trachoma.

"I am aware that there are many cases which cannot be definitely stated to belong to one or other category; for instance, a case may be between trachoma II and trachoma III, or trachoma IV. But it is my experience that this division of trachoma is a valuable means of differentiating between its various phases."

The reason I have so fully quoted from MacCallan is that the division into four stages is not only clinically serviceable but it is especially valuable in determining the utility of the various forms

of surgical measures for the relief of the diseases and its various complications.

A few words about the *surgical anatomy of the conjunctiva* and of a few other ocular tissues that are most commonly affected by trachoma.

The normal conjunctiva is divided into three parts, the *conjunctiva palpebrarum*, the *conjunctiva fornix* and the *conjunctiva bulbi*. Histologically, it consists of two layers—epithelium and *substantia propria*.

The epithelium varies in different parts of the conjunctiva. In the inter-marginal zone, it is flattened and the middle layer consists of "prickle" cells, so that, histologically, the membrane at this site bears a close resemblance to epidermis. Elsewhere, while varying in the character and distribution of its epithelium, the membrane presents the histologic features of mucosa.

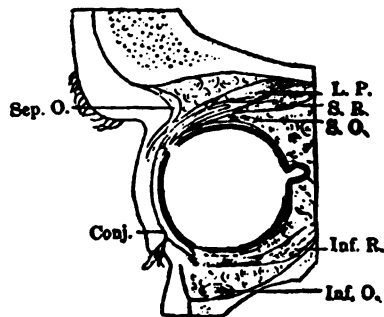


Fig. 1. The Relations of the Orbital Fascia to the Tendons of the Levator Palpebrae, the Superior Rectus and the Tarsal "Cartilage."

The *substantia propria* consists of a superficial adenoid and a deep fibrous layer. The meshes of the adenoid layer contain lymphocytes which are numerically increased in conjunctivitis, giving rise to "pseudo-papillæ."

Important histologic elements are, also, "goblet cells" (found in all parts of the membrane) and which, according to Parsons, are "true unicellular mucous glands, moistening and protecting the conjunctiva and cornea." Baumgarten's tubular glands occur in the nasal part of the lid, and Krause's accessory lachrymal glands lie mostly in the upper lid between the fornix and the edge of the tarsus. The semi-lunar fold represents the nictitating membrane of birds and the caruncle is a little island of skin.

In section the conjunctival surface appears uneven, owing to the development of adenoid tissue in the *substantia propria*.

In commenting upon the structure of the conjunctiva in relation to the pathology of the membrane, Parsons states that "there is a fundamental difference in different parts which manifests itself in the specific character of various pathological conditions and in their punctilious limitation to definite areas."

The tarsus, or tarsal cartilage (improperly so-called; it exhibits

no cartilage cells) is a fibrous, connective tissue plate, quite large in the upper lid and of smaller size in the lower lid. It gives form to the upper lid especially and, when both lids are closed, forms a shield for the eyeball. The tarsi are attached to the nasal process of the superior maxillary by the *tendo oculi*, the upper plate being united to the margin of the orbit by the tarso-orbital fascia. The levator of the upper lid is attached to this fascia and to the upper edge of the tarsal plate. Opening on the conjunctival surface are the glands of Waldeyer, acino-tubular structures secreting a modified mucus.

In spite of the great advance in the pathology of trachoma and in the determination of the character of the trachoma bodies, *clinically* we have not much advanced beyond the observations made on this disease before the discovery of supposed specific trachoma bodies by Prowacek and Greeff. Indeed, I quite agree with the pronouncement of Parsons that the essential anatomical feature of all clinical types of trachoma, whether papillary, granular, mixed or gelatinous, is the *trachoma follicle*.

The *follicles* occur in the adenoid layer* of the conjunctiva, and consist of (1) a stroma which is equivalent to the reticular tissue of the adenoid layer of the conjunctiva, (2) lymphoid elements in the meshes of the stroma, (3) vessels which surround the follicle and send sparse capillaries into it, and (4) an inconstant fibrous tissue capsule. The epithelium is invariably thickened or may assume an epidermal character. Cysts may occur from the blocking of new-formed tubular glands. Changes in the conjunctiva are always present. There is widespread infiltration with lymphocytes, accompanied by edema, after the disappearance of which new vessels appear in the papillæ. Fibrous tissue develops along the walls and contracts, the papillæ shrinking. Trachoma ends in cicatrization most often by (a) absorption of the contents of the follicle and proliferation of the connective tissue of the conjunctiva; less often (b) by the contents of the follicles being expelled into the conjunctival sac, the resulting ulcer healing by cicatrization. Occasionally resorption by retrogression without softening may occur. New fibrous tissue is chiefly derived from the adventitia of the blood vessels. The process invades the neighborhood of the follicles and connective tissue and eventuates in scar tissue, there being no trace of follicles at last.

The *tarsus* is primarily affected and, by contraction of the con-

*Most of the illustrations of this paper are reproductions of cuts from Green's chapter in Wood's *System of Ophthalmic Operations*.

junctival fibrous tissue, is bent so as to make the convex surface look forward. Occasionally the tarsus may shrink in size without bending. There may be ectasia of the ducts of the tarsal glands with subsequent atrophy of acini due to an overgrowth of bands of fibrous tissue.

If we regard the *surgical treatment* of the disease as any *external application* or procedure that may be made for its arrest or cure, we must necessarily include those local applications and minor remedies which might, generally speaking, be called non-operative. I shall not do more than indicate a few of these, if for no other reason than that their name is legion. If I may be permitted to do so, let me refer to my work, *A System of Ophthalmic Therapeutics*, for such remedies as I omit in these lectures.

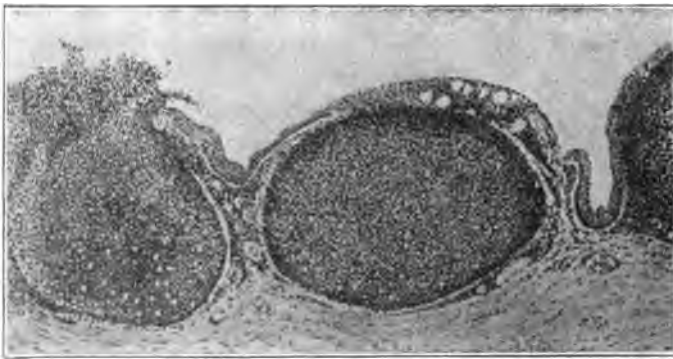


Fig. 2. Trachoma Follicles in the Adenoid Tissue of the Transition Fold.
The Follicle on the left has ruptured.

When there is no acute infection of the cornea and no iritis present I have found most valuable and soothing, *cold fomentations*, followed by the instillation into the conjunctival sac of a solution of boracic acid, gr. 15 to the fluid ounce; solution of bichlorid of mercury 1-6000, or solution of formalin 1-4000. When the discharge is established and especially when it becomes excessive, the conjunctival surfaces of the lids should be painted with a one or two per cent solution of nitrate of silver, the excess being washed away or neutralized with a solution of common salt. A twenty per cent solution of protargol or argyrol may also be used with benefit. In conjunction with these measures (that are especially to be used in the early, acute stage or in acute exacerbations of the first three stages of trachoma) I also believe in frequent cleansing of the conjunctiva

with non-irritating antiseptic solutions carried out by the patient at home. One of the best of these is a 1-5000 solution of formalin.

In the early stages, when the granulations are excessive and prominent, massage of the lids with yellow oxide of mercury ointment:

℞
Hydrarg. oxid. flav. gr. v
Lanolin.
Vaselin. ā ā 3 ss

or the nitrate of mercury ointment made up with "brown ointment," diluted to the proper consistency with refined cod liver oil, has given good results in promoting absorption of the granulations.

The applications to the diseased lids should be kept up for a long time, many months elapsing, even in the mild cases, before the disease can be cured. Atropin should be used when corneal complications set in.

There can be no doubt but that the various preparations of copper sulphate, employed when there is but little discharge and no acute manifestations of the disease, is of great value in promoting cicatrization and the eventual cure of trachoma.

T. A. Woodruff, who has made a study of "recent" trachoma, favors in the early stages the local application of copper sulphate solution. He thinks the solid stick is preferable in the later stages when the trachomatous bodies have invaded the deeper tissues and an escharotic effect is desired. The solution should be as strong as can be comfortably borne by the patient and without setting up too severe a reaction. It should be brought in contact with all portions of the diseased area and applied well into the culs-de sac by means of cotton twisted around a toothpick after complete exposure and thorough drying of the conjunctival surfaces with a pledget of cotton or sterilized gauze. This procedure may be repeated as often as is considered desirable, care being taken to dry the conjunctiva before each application. He uses a saturated solution of sulphate of copper in glycerin (90 grains to the ounce), and from this makes a fresh solution with water each day by the addition of fifteen drops of distilled water to one drop of the glyceride of copper. The strength is gradually increased until the point of toleration is reached.

This valuable method was first suggested by Prince of Springfield, Ill.

I have been in the habit of using this solution in conjunction with office treatments, two or three times a week, of the *lapis divinus*,

gently applied to the everted lids, any excess of the remedy being washed away.

The use of *jequirity*, either in powder or infusion, for the treatment of pannus has unfortunately fallen into abeyance in America, mainly because of the variable dosage and its dangerous and uncertain action. Römer has sought to remedy these defects in an otherwise valuable agent by the careful manufacture, from the *Abrus precatorius*, of a definite compound (containing 50 per cent glycerine) which he has called *jequiritol*. He believes this to be a more reliable preparation than *abrin*, the infusion or the powdered seeds. It is made in four different strengths. The treatment begins by the instillation of a single drop of No. 1 on the first day, the dose being gradually increased in amount and strength until a well-marked jequirity inflammation is set up. Should the inflammatory reaction at any time be too severe it is controlled by dropping into the eye a small quantity of *jequiritol serum* (prepared on the principle of Behring's serum) repeated as often as necessary or, if the reaction be excessive, by its hypodermic use. Both remedies are prepared and sold in a box—with full directions for use—by Merck & Co. I have had considerable experience with this remedy and recommend its use to my colleagues, in *pannus trachomatosus* especially.

Cheatham was the first in this country to recommend the application of *powdered jequirity* directly to the conjunctiva. Employed with due caution, it is a very successful method of treating trachomatous pannus and is not as dangerous as it seems to be.

J. D. Seba has had much experience with and prefers the freshly prepared infusion of the powdered bean. He begins with swabbing or flushing the everted conjunctiva with a mixture of a quarter of a grain to the drachm of distilled water. As soon as the jequirity conjunctivitis sets in the patient uses a simple borated wash every three or four hours. When the inflammation subsides he again applies the jequirity, increasing the strength of the mixture as much as is necessary to set up a decided conjunctivitis.

In old cases of trachoma G. C. Savage has had marked results from the use of a weak infusion made from the powder of half a bean mixed in a fluid ounce of distilled water. To this infusion he often adds 20 grains of boracic acid. Into each of the diseased eyes two drops are put at bed-time and the action of the drug carefully watched. A fresh infusion should be made every two weeks and the use of the remedy continued until recovery is complete.

Coming to *operative treatment pure and simple*, the classification of de Schweinitz includes most of it: *Scarification of the conjunctiva; abscission of the granulations; excision of the retrotarsal fold with or without a strip of infiltrated fornix; excision of the tarsus (Kuhnt), and squeezing or rolling out the trachoma follicles with forceps.*

According to Pick the advantages of operative interference are: (1) Shortening the period of treatment; (2) lessening the liability to relapse; (3) favorably influencing the corneal complications; (4) obviating the wretched sequelæ of the disease. Despite the changed attitude of the great majority of ophthalmic surgeons, there still remain a few who either deny the efficacy of any surgical measure, or affirm that surgical are no more efficacious than non-surgical measures.

Expression is most highly successful when the follicles have commenced to show softening, i. e., when the disease is entering upon its second stage. Elschmig regards "expression" at this period in the development of the disease as the operation of choice. It is contraindicated in acute trachoma, in cases of follicle formation in the folds of transition, during an acute exacerbation and in the cicatricial stage. The operation may require repetition one or more times; follicles which have escaped destruction may give rise to auto-reinfection. In severely infected regions the operation does not safeguard the conjunctiva from extrinsic reinfection.

In earlier days *general anesthesia* was unquestionably the rule, and is still indispensable, in my opinion, in a minority of cases; e. g., excessively nervous individuals, some children, etc. Fair anesthesia is usually secured by the subconjunctival injection of a 2 per cent cocaine solution. D. W. White has used, with entire satisfaction, powdered cocaine dusted on the palpebral conjunctiva. The operation is begun from one-and-a-half to two minutes later. He has used the method in nine hundred patients ranging in age from five to sixty years.

Although expression has received very great general acceptance, it must not be imagined that the method has altogether escaped censure. An excellent summary of the principal objections that have been advanced against expression is given by Strouse as follows:

"(1) The forcible expulsion of the trachoma follicles produces extensive laceration of the delicate conjunctival tissues. (2) The deeper-seated follicles are evacuated with difficulty. (3) The pressure required to eradicate the disease thoroughly, especially if, as frequently happens, the roller of the instrument does not rotate but glides over the surface, is so considerable that the underlying tissues are subjected to severe contusion which retards healing of the affected parts. In consequence of this the reproduction of normal epithelium after expression is impaired and an excessive amount of cicatricial tissue is produced."

Some operators perform parallel, linear scarification of the con-

junctiva either as a surgical curative treatment or as a preliminary to expression. The earliest form of "squeezing out" the follicular contents was by means of the thumb and finger. In modern times it was first advocated by Elbe in 1828 and was used by Hotz in 1886.

In 1889, Prince presented to the Illinois Medical Society his well-known ring forceps. Shortly afterward appeared the trough-shaped forceps of Noyes, and from this time the operation began to receive general acceptance.

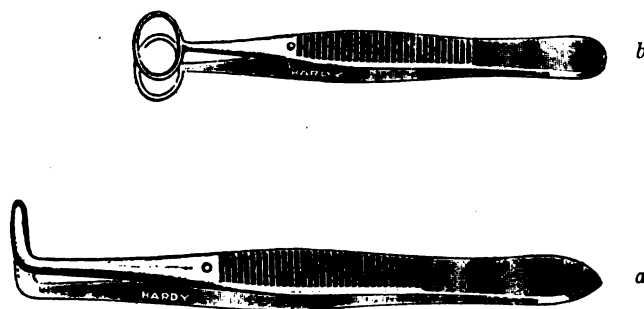


Fig. 3. Expression Forceps. *a*, Noyes'. *b*, Prince's.

It was not, however, until Knapp presented to the profession his ingenious roller forceps that expression of the trachoma follicles became practically universal.

After experimenting in a few cases with Prince's and Noyes' forceps, it occurred to Knapp that an instrument acting on the principle of a mangle would express the granulations as well and with less bruising and laceration of the tissue. Acting on this idea, he had made the "roller forceps," which consist of "two creased cylinders, about two millimeters thick and ten or eleven millimeters long, rolling on pivots in horseshoe-shaped ends of the shafts." To insure effective expression the surface of the rollers must offer resistance; hence the creases.

Knapp's description of the technique of expression of trachoma granules with roller forceps is as follows:

"To express trachomatous infiltration both thoroughly and with the proper care not to wound the cornea nor bruise or lacerate the conjunctiva, is painful and requires time. I therefore, as a rule, use general anesthesia. As the operation has proved harmless, I operate on the four lids at the same sitting. The upper lid when everted should be seized at its edge with the (roller) forceps at the center of the retrotarsal fold drawn upward, so that the whole extent of the granular deposition shall be exposed. Then the lid is held everted with the index-finger, and one cylinder is pushed deep into

the upper fornix over the edge of the lower lid, which, remaining in situ, protects the cornea. The other cylinder passes over the tarsal surface of the conjunctiva. The forceps is now compressed with moderate force and drawn forward, so that we notice the even rolling of the cylinder that lies on the tarsal surface. The granules come out more or less crushed by the cylinders, and if they are soft their contents are seen only as a gelatinous liquid. The forceps is introduced and the manœuvre repeated again and again until all trachomatous substance is pressed out. At first the tissue caught between the rollers is thick and resistant, but gradually it thins down and, when all the infiltrated substance is out, the retrotarsal fold stretches as a thin, doubled-up membrane between the cylinders. Then the center of the fold should be drawn up and inward so as to unfold and stretch out the portion concealed behind the outer commissure. This portion is then pressed out with the roller as thoroughly as the central portion. The same ought to be done with the lower lid and the caruncle. If, which is not rare, the tarsal surfaces of the lids are also beset with granules, these can best be pressed out if, on the lower lid, one cylinder passes over the outer and the other over the inner surface. On the upper lid this need not be done, as the longer and thicker tarsus gives sufficient resistance for the roller to liberate also the tarsal surface from the included granules. The impressions from the ridges of the cylinder give to the surface a fluted appearance which must be uniform, *i. e.*, free from granules. On inspection the whole retrotarsal fold with the canthal portions should be entirely free from granules, and present a dark-red surface with a number of small redder dots, apparently the cavities of the granules now filled with blood. The surface may or may not be washed over with a small pad of absorbent cotton dipped in a solution of bichloride of mercury, 1-500.



Fig. 4. Knapp's Expression or Roller Forceps.

Ancil Martin, a trachoma operator of wide experience, uses in the right hand a Knapp's roller forceps and in the left a Noyes'. Everting the upper lids he grasps the folds with the Noyes' and "milks" with a Knapp's. Reversing the procedure when advisable, he fixes with a Knapp's and expresses with a Noyes'. The latter method is especially satisfactory for the removal of the trachoma bodies from the canthi, and in "nursing" them from the bulbar conjunctiva. Traction should be also made from the firmer palpebral conjunctiva toward the equally separated bulbar conjunctiva and never the reverse. After some practice one will find that he is using both hands, thus making the operation a very rapid one. Particular attention should be given to the careful removal of the bodies from the line of the folded upper lid. Should this step be overlooked it

will be discovered later that there is a transverse line of trachoma bodies along the center of the upper lid just in the situation most likely to create corneal friction.

The mechanical principles underlying Knapp's instrument have been utilized by ingenious ophthalmologists in an effort to obviate real or fancied deficiencies.

In Campbell's modification the ends of the cylinder project beyond the ends of the shaft. Rust made one arm a straight prolongation of the shaft,

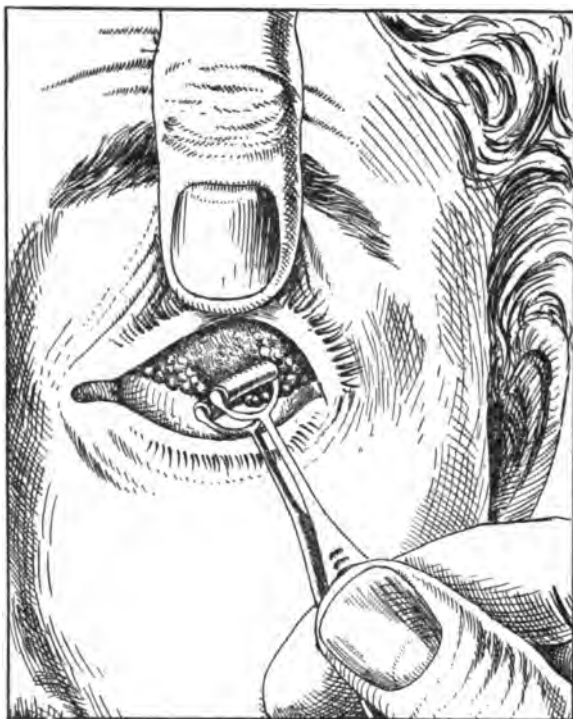


Fig. 5. Expression of Trachoma Follicles with Knapp's Roller Forceps.

the other turning off parallel with the cylinder. Both modifications were designed with the object of gaining readier access to the granulations of the external and internal canthi. Falta has constructed a roller forceps, the cylinders of which are perforated, the holes of one cylinder opposing a space between the holes of the other cylinders. This embodies the principles of Knapp's rollers and Kuhnt's expressors.

J. H. Claiborne's rollers have parallel rows of fine points instead of flutes. With these forceps the granulations are first lacerated and then squeezed, combining the processes of "grattage" and expression. Claiborne's contention that with this instrument the operation is attended with less trauma and insignificant post-operative reaction is probably well founded.

W. Norton Whitney has also modified Knapp's forceps by replacing one of the rollers by a flat, wash-board like terminal, over which the remaining roller is made to pass so that the fold of conjunctiva between these two surfaces can be subjected to the necessary pressure without pulling or stretching it unduly. The motion is obtained by means of a double hinge at the end farthest from the roller. This instrument was designed to obviate, to a

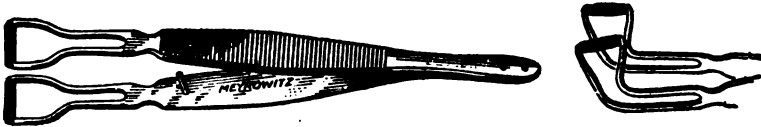


Fig. 6. Claiborne's Modification of Knapp's Roller Forceps.

large extent, the common defect of roller forceps, viz., the "traction exerted upon the membrane in stripping the follicles.

Expression forceps, in which the roller principle is not utilized, have also been devised by Darier, Harold Gifford, Martin Cohen, Jas. Hancock and others.

Cohen's instrument is shaped like an artery forceps, having a French lock fulcrum between the blades and handles, the latter being reinforced by a removable spring. The handles are so curved as to allow for the inspection of the entire field of operation. The crushing surfaces are furnished with two horizontal grooves and are small

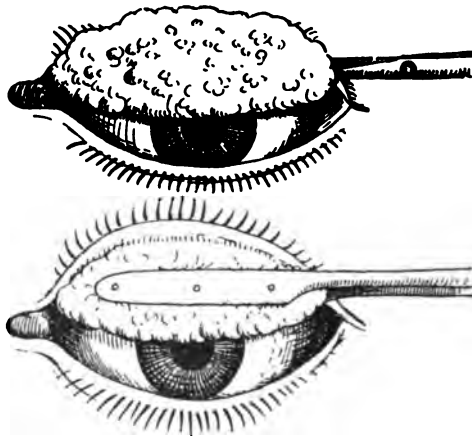


Fig. 7. Darier's Forceps in the Removal of Trachoma Follicles.

enough to gain easy access into the canthi. A thumb rest on the posterior blade steadies the instrument while in use. The method of its application is as follows: Having everted the lids (using two of these instruments, one to steady the lid) the compression surfaces of the blades grasp the granulations, the operator being thus able to

apply and control the requisite force. The advantages claimed for this instrument are: (1) The liability of injuring the conjunctiva by removing the granulations is lessened. (2) The operation is not followed by the unpleasant effects that attend the employment of other instruments, such as adhesions, inflammatory changes, granulations and scars.

Hancock's instrument consists of opposed stationary cylinders of moderate size and absolute smoothness. It does not become clogged with blood, a fault common to most instruments of the roller type.

We have considered those instruments which empty the follicles, on the principle of the mangle, and those which perform their office by the combined effects of pressure and traction. There remain to be described instruments in which the principle of pressure alone is utilized. The best known is the "*expressor*" of Kuhnt, with its modifications. The working part of this instrument consists of two perforated metal plates, each perforation coming in opposition with an unperforated portion of the opposite plate. The modified expressor has a perforated and unperforated plate. This modified instrument is used in gelatinous degeneration of the fornices, by inserting the perforated blade beneath the uninverted lid and making pressure.



Fig. 8. Various Forms of Expression Forceps for the Removal of Trachoma Granulations. (Kuhnt.)

M. D. Stevenson's Instrument for Removing the Granulations in Trachoma (*Ophthalmic Record*, Aug., 1904, p. 357) resembles Kuhnt's. It consists of two opposing blades, one solid and the other completely filled with round holes (at least 2mm. in diameter), having sharp margins. Considerable force may thus be applied in

squeezing out the diseased granulations without injury either to the lid skin or the conjunctiva, to each of which a blade is applied.

After several instillations of a 4 per cent cocain solution the lid is everted and the forceps applied, first on one side and then on the other. Portions of the tissue are thus squeezed into the holes; the mucous membrane ruptures, and the granules are expressed. After the operation, the mucous membrane somewhat resembles a tessellated pavement and quickly heals.

There is very little reaction following these various expressions or rolling operations, and the after-treatment is simple.

Gauze pads, chilled by contact with ice, are applied to the closed lids and frequently renewed. Some operators prefer frequent douching with hot sterile water or saline solution.

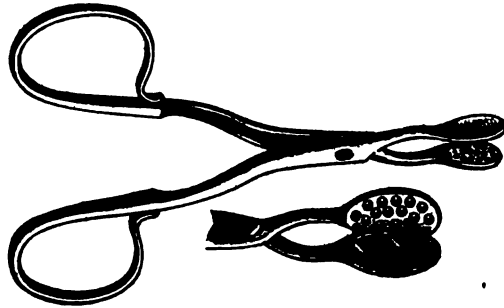


Fig. 9. Mark Stevenson's Forceps for the Expression of Trachoma Granulations.

The day following the operation the lids, though somewhat swollen, can be opened spontaneously. On eversion one observes a yellowish gray exudate in the form of a slightly adherent pellicle covering the conjunctival surfaces. This should not be disturbed as it will come away gradually at each successive irrigation. The conjunctival surface should be copiously douched with normal saline or boric acid solution, and the lids and the margins anointed with a bland ointment.

On the second or third day a probe should be passed to the upper and lower fornices and gently drawn across from the inner to the outer angle, for the purpose of rupturing any adhesions which, if left undisturbed, might give rise to symblepharon.

D. W. White believes that the best preventive of symblepharon is castor oil, instilled immediately after the operation.

A great many surgical procedures of the type called by the French, *grattage*, have been developed at various times and there

can be no doubt but that the form of traumatism applied under one or more of these forms is externally useful as a substitute for or as an adjunct to, the rolling or expressing form of treatment. Beard says that *scraping* (or *grattage*) is one of the most ancient of the methods and was made use of by Woolhouse in the 18th century, who scraped granular lids with a little brush made of barboles of grain. In 1859 Borelli rubbed or scraped out the diseased follicles with a brush made of fine metal wires.

This form of curettage is recommended by Strouse who uses a specially constructed curette, with a cutting edge 1.5 mm. wide, ground sharp in its entire circumference. The lower lid is everted and rapidly scraped over its entire extent. The upper lid is everted and held between the thumb and finger of one hand, while the curette is passed up into the fornix and this part of the conjunctival sac is scraped, care being taken to penetrate all the folds. The everted portion of the lid is treated last. During the entire procedure, which occupies but a few minutes, an assistant mops the lids with absorbent cotton dipped in bichloride solution 1 to 10,000. The surfaces are washed and touched with a 2 per cent solution of nitrate of silver. Ice pads are applied for half an hour. Strouse states that the advantages of grattage are an uncomplicated technique, rapidity of performance, comparative painlessness, minimum injury to the tissues, absence of inflammatory reaction after operation, simplicity of after-treatment and absence of recurrences.

Egbert has devised two curettes, one sharp and one blunt, "which are so constructed that all portions of the involved conjunctiva, including the superior fornix and retrotarsal folds, can be reached.

The edge of the instrument is so fashioned that while all granular and hyperplastic material can be readily removed, there is little danger of injuring smooth, healthy tissue. The edge of the sharp instrument points downward and backward to an angle of about 45°, and when the instrument is drawn by the handle, readily engages and removes the abnormal tissue. On the sides of the spoon the margin merges into the flat metal so as to prevent side cutting or laceration. In using these curettes the upper lid is everted over a horn or metal spatula and the sharp curette, the handle of which is held between the thumb and the first and second fingers, much as an ordinary spoon is held, with the edge forward, is pushed over the eyeball well up in the superior cul-de-sac and then drawn downward from all directions of a segment of a circle, similar to that outlined by the brow. Firm, though gentle, pressure is necessary and the curetting must be thoroughly done. The blunt curette is now substituted for the sharp one and the process repeated with slightly more pressure until the tissues feel smooth under the instrument. The upturned portion of the conjunctiva is next similarly treated,

the edge of the curette being turned downward. The lower lid is then likewise freed from all granules.

An effective instrument for grattage is the so-called "trachomatome" devised by Jameson.

This instrument is planned on an observation that a pyramid of steel when placed with its apex against a mucous membrane susceptible of indentation and passed to and fro with moderate pressure will not merge in it but glide over it producing undulations. This fact applies also to numerous pyramids as represented in the instrument. This is not the case, however, should the membrane be interspersed with elevations such as exist in trachomatous membrane. As the instrument passes over the surface there is a sense of resistance and on inspection it will be found that the trachoma bodies have been attacked and ruptured, the interstices and normal tissues remaining, for the most part, intact. Jameson is confident that this instrument possesses distinct points of utility as follows:

- (1) For grattage it places within reach of the operator a graded system of instruments (there are three in the set) adapted to the size of the granules or excrescences to be attacked.

- (2) It is an instrument selective of granulation elements and, *per contra*, one which preserves to the greatest degree normal tissue.

- (3) It is adapted not only to the primary operative, but in the post-operative treatment, in the course of which secondary growths may appear.

- (4) As an adjunct to the expression operation it opens avenues in affected tissues, rendering expression easy, and accomplishing it with less trauma.

In operating on the lower lid the trachomatome is placed between it and the eyeball and pressed well down against the former. Counter-pressure is made by a curved index finger pressed against the lid from without. On the upper lid a double eversion is made, and having gone over the posterior exposed part the forceps are released and the everted lid grattaged against the tarsal cartilage, which makes a good resisting surface. Care, however, is especially required at this step as the curve of the everted lid lies in contact with the cornea and overlaying pyramids may injure it if left unguarded. Lastly, the lid having assumed the normal position, it may be grasped between fingers, stretched, and the desired instrument swung to and fro over its entire surface.

A method of grattage and one which bids fair to enjoy extended popularity by reason of its simplicity has been described by Coover:

Under general anesthesia, the upper lid is grasped by Darrier's forceps (placed parallel to the palpebral margin) and turned to bring the retrotarsal fold into view. A horn speculum is inserted beneath the lid to protect the cornea. 0 or 00 sandpaper, in strips 3 to 4 inches in length by $\frac{3}{4}$ of an inch in width, previously sterilized by soaking in alcohol and burning it off, is rolled lengthwise over the index finger. Holding it firmly between the finger and thumb, the entire lid surface is thoroughly and briskly rubbed. By folding or rolling the strip of paper in different ways all the recesses can be reached and the entire surface rubbed down smooth. If the lower lid is involved, it should be treated in exactly the same way. If there are any

granulations on the bulbar conjunctiva, the operator need not hesitate to smooth them down also, of course using care and more gentle pressure.

The surface of the lids and entire conjunctival sac are now thoroughly cleansed of blood and adventitious particles. A moist dressing is applied and held in place by a light, yet firm bandage. Cold applications are used for the next five or six hours and the eyes cleansed at intervals. The following day the conjunctiva will be found covered with a slight exudate which remains for several days. Silver nitrate, 2 grains to the ounce, is applied once in twenty-four hours to the everted lids. After the exudate has disappeared 1 per cent ichthyol in vaseline is used once daily, or 1 to 500 solution copper sulphate is used until the induration or thickness has disappeared, which it does in from three to four weeks.

The advantages claimed for this operation are: (1) That it is applicable to all forms of trachoma. Even in old cicatricial forms it acts beautifully, smoothing down the rough and hypertrophied portions of the conjunctiva. (2) There is very little reaction. In no cases operated on by Coover has there been a severe irritation or a single corneal complication. By this method the smaller granulations in process of development are removed and the after-treatment with caustics is unnecessary.

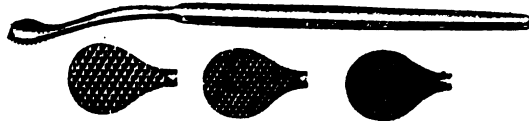


Fig. 10. Jameson's Trachomatome.

The following method is enthusiastically endorsed by Sattler: Under cocain (in fresh cases) or general narcosis (to insure thorough work in one sitting) the lid is everted and held by an assistant. The follicles of the palpebral conjunctiva are punctured with a cataract needle and the contents scooped out with a sharp curette (from 1.5 to 3 mm. in diameter). To gain access to the transition fold and plica the tissue is grasped by fixation forceps and drawn to one side or the other. By shifting the grasp of the fixation forceps one is enabled to reach every part of the fold. Several seances are usually necessary. The reaction is slight and can be readily controlled by ice compresses. A more or less prolonged after-treatment (as with expression) is necessary. The operation is applicable to all cases with evident follicular deposits. Chronic cases with thickened lids, in which the granulations of the palpebral conjunctiva and transition folds are obscured by swelling, should be subjected to preliminary medical treatment. As soon as the follicles become visible they should be "ripped and scooped." In practice, however, this method has been largely reserved for cases in which the granulations are isolated and few.

Falta has recently published a highly original operation suitable for the obliteration of clumps of little follicles which are found on the convex tarsal border of the upper lid, and for smoothing out the papillary overgrowths on the tarsal conjunctiva. He had made a tiny burr, similar to a dental burr, but with shallow grooves. This is fixed in a dental engine, the upper lid is everted, a horn plate inserted into the upper cul-de-sac, and the conjunctiva is ground smooth of papillæ and granulations by the rapidly revolving burr passed to and fro under the lid.

Brossage has been recommended by Darier, who adds to the simple brushing out of the follicles a number of other surgical procedures.

If there is reason to believe that eversion will be difficult, he begins by dividing the external angles. If the caruncle is much involved, it is excised. Corneal pannus is curetted. The bulbar conjunctiva is then gently scrubbed with the brush, followed by lavage with sublimate. The lower lid is grasped with a special forceps (similar to a hemostatic forceps) with points on its surface for penetrating the tarsus. It is necessary to seize the lid 2 mm. from the marginal border to avoid tearing the tissues. The forceps thus placed roll the lid backward in such a manner as to stretch the conjunctiva without tearing it. All granulations are then carefully scarified. If they are few and scattered, a bistoury or discission needle will suffice. If, on the contrary, the entire conjunctiva and the tarsal cartilage are infiltrated, Darier prefers the three-bladed knife, which renders it possible to make the scarifications more rapidly. The depth of the incisions should depend on the thickness of the granular infiltration, the aim being to bring to the surface the contents, while sparing the conjunctiva as much as possible. This gelatinous debris must be carefully cleaned away from the wounded surface. Then follows the "brossage," which is done with a small tooth-brush provided with hard and short bristles, previously disinfected by immersion in alcohol and then in a warm solution of cyanide of mercury. During the operation the brush is frequently dipped into a solution of mercury cyanid, 1 to 500. One should aim to scrub just vigorously enough to empty the infiltrated tissue without bruising or tearing the little strips of conjunctiva between the scarification lines. After releasing the grasping forceps the granulations which have been hidden by the instrument must be scarified and brushed out. The forceps are applied to the upper lid in a precisely similar manner and the lid rolled back. It is important to begin the scarification in the cul-de-sac because the conjunctiva, once scarified, retracts. The "brushing out" is performed as on the lower lid. The dressing consists of a cotton compress moistened with a 1 to 2,000 solution of cyanide of mercury kept on by means of a bandage. The following day the upper lid is carefully turned and gently douched, care being taken to avoid hemorrhage and to preserve the conjunctival tissue. If one cannot evert the lid a probe should be passed between the globe and the lid to prevent adhesions. The following days a 10 per cent solution of argyrol is instilled. In a fortnight the patient is well on the road to recovery but solutions of cyanid of mercury alternating with instillations of argyrol should be kept up several months.

The *indications for brossage* are, according to Terrien, (1) the

presence of voluminous granulations occupying the cul-de-sac whether associated with inflammation or not, and (2) when the infiltrated conjunctiva is being converted into waxy tissue. It has the advantage over massage that the granulations, even those hidden above the tarsus, are all reached. Improvement does not always last and repetition of the operation may be necessary. One positively unfavorable sequel is entropion, which occurred in fifteen cases out of one hundred

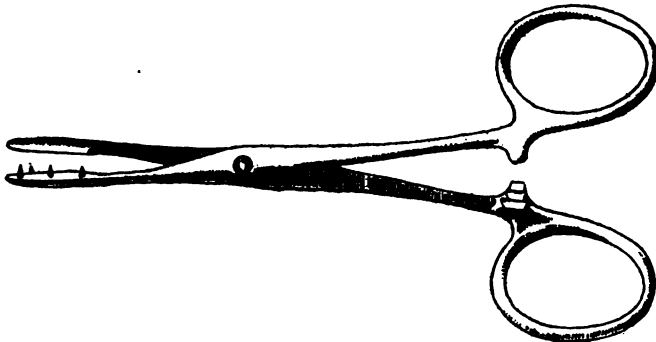


Fig. 11. Darier's Forceps for Grasping the Lid in Operations for the Relief of Trachoma.

and thirty operated upon. It is probably due to too energetic brushing, which, in exceptional cases, is said to have led to the complete destruction of the conjunctiva.

Massage includes a number of methods whereby the diseased conjunctiva is subjected to rubbing, chiefly by means of instruments, with or without other remedies.

Liekernik uses glass balls, 8 to 14 mm. in diameter, mounted on handles. These are dipped in cyanide of mercury solution 1 to 2,000, and rubbed vigorously over the everted lids.

Scrini dips a glass rod in a solution of iodic acid, allows it to dry and then rubs the trachomatous conjunctiva. For after-treatment he massages the cornea with cacao-butter containing dionin. Internally, iodides are administered.

Epinow has devised a spoon-shaped horn plate to fit the upper conjunctival sac. This is rough on the upper surface and is inserted so as to bring the rough surface against the upper lid. The upper lid is anointed with vaseline and rubbed against this rough surface.

Herczogh rubs the conjunctiva with a cotton wad saturated with a 1 per cent sublimate solution. A similar procedure is described in detail by Beard:

"The lids are cleansed externally with warm boric acid solution. They are then everted and a single drop of adrenalin solution instilled. A small hard mop is made by winding absorbent cotton on the tip of a carrier. This is dipped into a very hot solution of sublimate, about 1 to 250, the lid is again everted and the affected conjunctiva rubbed. The rubbing should be neither too delicate nor too rough, and not prolonged beyond a minute or two, dipping the mop in the hot sublimate now and then, but never leaving an excess of liquid on it to run down the cornea and healthy portions of the conjunctiva. Then, without replacing the lids, the whole mucous sac is copiously irrigated for another minute with a 4 per cent boric acid solution, as hot

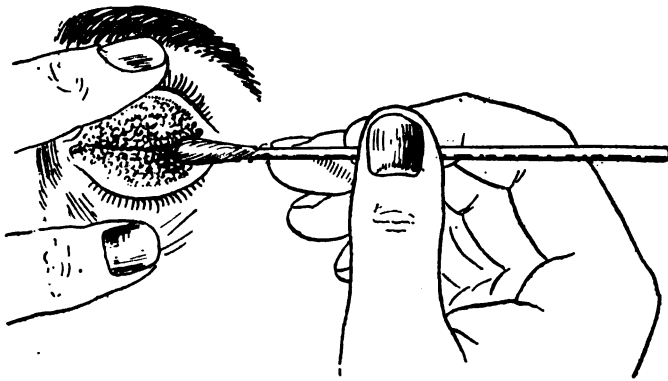


Fig. 12. Method of Massage for the Removal of Trachoma Follicles.

as can be borne. And lastly, a drop of cocain solution is put in. This is repeated with two-day intervals, and, on the alternate days precisely the same is done excepting that a 50 per cent solution of argyrol is substituted for the sublimate. If properly carried out, there is no irritation after either treatment."

Pratt, Sedgwick and Bordley are firm believers in the efficacy of boric acid (in powder) well rubbed into the conjunctiva. The everted lids are vigorously scrubbed with a cotton-wound toothpick while an assistant continually dusts powdered boric acid on the conjunctival surface.

[To be concluded.]

DISEASES OF THE TONGUE AND MUCOUS MEMBRANE OF THE MOUTH.*

By LOUIS E. SCHMIDT, M. S., M. D., CHICAGO.

Diseases of the tongue are exceedingly common. Oftentimes, they are manifestations of eruptive conditions of the skin or of general diseases, and when they are local and simply conditions which are accidental or happen to be concomittant with skin lesions, they naturally become of the greatest interest, and often are of much importance.

It is true that surgeons and throat physicians are usually called to see the more pronounced conditions, but I am convinced that it is most often the dermatologist who meets with these, as well as with the apparently minor conditions. I am sure that it is as much of a pleasure to us to diagnose correctly and outline the prognosis of any or all of these conditions as is any task which may arise in the course of our professional work.

There can be no question that there is greater difficulty in recognizing syphilitic lesions from non-syphilitic on the mucous membranes of the mouth than if they were located on the skin. I need only point out the typical example of a lesion which is present on the skin and passes over onto the mucous membrane of the mouth. Consider how pronounced and characteristic the lesion is on the skin and the indefinite appearance which the same lesion presents on the mucous membrane. On account of maceration and secondary infection, the appearance changes quickly, and besides, the differences of the individual lesions of the various diseases of the mucous membranes of the mouth cannot be so great as on the skin, partly for the foregoing reasons.

In diagnosing lesions of the mouth, I have steadfastly adhered to the attempt to find points of similarity to the known lesions on the skin of definite skin diseases. In doing this it certainly is advisable to institute a routine mode of examination. With and without electric illumination, all parts of the mouth are systematically examined. It is needless to state that daylight often assists one in finding lesions which are overlooked under artificial light. It is desirable to have a swab to remove mucus and secretions, in order to see the nature of the lesion; also to note whether it is easily bleeding and whether or not it is sensitive. There can be no objection to palpation in order to feel the consistency and to note other details. It is readily with the gloved finger.

*Read at the A. M. A. meeting, Atlantic City, June, 1909.

In speaking of the mucous membrane of the mouth I have reference to that of the tongue as well. Lesions are often present on the tongue as well as on the buccal or other inner surfaces of the mouth. In studying diseases of the tongue, it is always necessary to examine the entire mouth cavity for the presence or absence of lesions, just as it is necessary to look over the entire surface of the body, in order to find additional information which will aid in establishing a diagnosis.

I shall confine these remarks chiefly to conditions which I have noted on the tongue. It will also be of interest to include conditions of the lips, when the pathological processes pass over into the mouth, and also the conditions found on the surfaces within the mouth cavity.

The occurrence of erosions, plagues, papules and ulcerations of the mucous membranes of the mouth and tongue are signs in a large variety of diseases. The general eruptive and infectious diseases, such as measles, scarlet fever, etc., have pronounced skin lesions, yet lesions also occur in the mouth. These latter, of course, differ in appearance—due to the reasons already mentioned. However, the lesions themselves may also differ. There are numerous skin diseases not in the aforementioned class, where the lesions of the mucous membranes are entirely different from the lesions of the same disease on the skin.

There are many factors that must be considered when a differential diagnosis is necessary. Is the eruption on the mucous membrane preliminary or successive to lesions on the skin? Or are they coexistent? Are they primary lesions, or are they changed by metamorphosis or are they secondary lesions? Are they single, multiple, etc.?

In the non-syphilitic skin diseases, Trautmann has shown the diseases which produce the following eruptions:

- I. Papular—Lichen ruber planus.
- II. Vesicular and exudative processes, erosion, plaques and ulceration follow in erythema exudativum multiforme, erythema nodosum, herpes, medicinal intoxication, pemphigus, eczema, impetigo contagiosa, impetigo herpetiformis.
- III. Parakeratotic exanthema, Psoriasis vulgaris.
- IV. Atrophic—Lupus erythematoses.
- V. Ulcerative—Lupus vulgaris and tuberculosis. When one thinks that all these must be considered and differentiated from the manifold diversities of which syphilis is capable, it can readily be noted why failures in diagnosis in diseases of the tongue are so common.

In taking up this subject, I will naturally be obliged to touch upon some diseases which are strictly surgical in character. As they are of interest, I trust their mention will not be considered out of place.

Another and a very practical classification, used for many years, is the following:

I. Eruptive conditions based on some general disease.

II. Lesions entirely due to local disturbances. This is a thoroughly practical and satisfactory clinical division and ought always to be kept in mind. It should be our endeavor to make such a distinction in all instances. In fact, there are conditions which permit of immediate diagnosis of a local from a general disease—even without further examination. Yet it is always a good rule to follow, never to omit the general examination, if for no other reason than to observe that it may be concomittant with some general condition which, at the time of examination, has no evidences in the mouth. In other instances, a general examination will often substantiate the diagnosis of a lesion in the mouth which may be very apparent.

The foregoing classification causes one to think that there must be some similarity of skin and mucous membranes, whether it be in the anatomical structure, the nerve supply, or the physiological function. It would be entirely out of place for me to discuss this here, as I am concerned only with clinical manifestations. However, to have thorough knowledge of this subject, this fact should be understood.

As regards the second division, or local conditions, these again may be due to: (a) local traumatism, infection or herpes or manifestations of a local nerve involvement; (b) new growths, and (c) congenital conditions.

From a practical standpoint, it is poor policy to use the classification of Trautmann. From a scientific viewpoint, naturally, it is possible to judge to some extent of the character of the lesion and then place it in the class to which it belongs histologically. This may or may not be an advantage in selecting the form of treatment. I admit that whenever I have under consideration the general systemic diseases, I always attempt to classify the lesions at once, whether they are syphilitic or non-syphilitic. But before doing this one should consider whether or not the lesion is systemic or local in character. Even if it is local, one must consider certain general diseases, as it may be only a local manifestation of a general condition.

As it happens, the mouth gives greater opportunities to study

diseases of the mucous membranes than the other orifices of the body. However, other mucous membranes are not exempt from eruptions, whether one is dealing with general or local diseases.

It is a fact, known clinically, that mucous membranes may be, and often are, involved in eruptive conditions before any manifestation appears on the skin, probably, as already stated, due to anatomical conditions. Yet, again, on account of both the anatomical and the physiological condition, apparently the same manifestation will differ widely in appearance on mucous membrane and skin. The diagnosis of lesions within the mouth may be much more difficult, as mentioned above, on account of the macerating action of the saliva. Vesicles and pustules are quickly destroyed, papules are soon eroded and ulcerations follow, and infections often occur. Under the circumstances there usually are no sharp outlines, nor is the color contrast so apparent as on the skin. Yet the acute bright red color and the slight swelling is marked when the outbreak is fresh and easily distinguished from more chronic conditions, such as syphilitic plaques.

Pemphigus is often cited as an example of a general disease where the eruption first makes its appearance in the mouth. Besides, it may remain a long time or there may be recurrent attacks of vesicles or blebs a long time previous to any manifestation on the skin. However, the diagnosis of pemphigus cannot be made out readily—probably only if loss in weight and general constitutional symptoms set in. Naturally, if subsequent skin lesions appear the diagnosis can quickly be made.

Again, there is lupus erythematosus. It is uncommon, but it must always be kept in mind. I do not wish to go into a detailed description, but if there is a coexistent skin lesion on the body which can be recognized as lupus erythematosus, and if other diseases of the mouth are excluded, then, of course, lupus erythematosus would be considered the probable condition. If the appearance of the usual skin lesion is kept before us, it is possible to establish a diagnosis in many instances.

Recently I have seen a case of erythema multiforme bullosa of a grave type. It was ushered in with acute swelling of all the mucous membranes, but apparently chiefly of the nose and mouth. It is true, no vesicles or any well defined lesions could be made out, as there was enormous swelling of all the mucous membranes. Soon afterward the typical skin lesions made their appearance and the diagnosis was then made with ease.

There are other diseases of somewhat similar types to those re-

ferred to. I need only mention purpuric conditions, angioneurotic disturbances, such as urticaria and oedema. These groups may or may not be based on a toxæmic basis, or even may be of microbic origin or of metabolic character. It goes without saying that the pathologic processes may be gastro-intestinal or involve other portions of the body, as liver, kidneys, etc.

There is one type of rash which also appears in the mouth which is never to be omitted in making a differential diagnosis. This is the drug rash. Naturally, there is a history of having taken some drug—powder for headache, pill for constipation, etc. These symptoms may, therefore, be present. However, symptoms of the drug or some disturbance which it may have caused may also be present. These conditions are always considered toxic in character, exactly similar to the intoxication produced by certain foods. I wish also to recall the rash following the use of serum and vaccine, etc. Among the drugs known to produce skin as well as mucous membrane disturbances are the oleoresinous products, such as copaiba balsam, oleoresin of cubeb, sandal wood oil and some of its derivatives, chloral, the iodides, belladonna, mercury, and most important of all, the coal tar products, such as antipyrine, phenacetine, etc.

As already stated, lesions appearing in the mouth do not retain their original appearance for any length of time. In considering this class of cases, the question of having taken a drug must be inquired into. In the mouth, there may be seen the remains of vesicles or bullæ, or disseminate red patches or diffuse red and swollen areas.

Finally, belonging to the systemic diseases producing rashes in the mouth, I wish to refer to the class of diseases known as the acute exanthemata. This group, undoubtedly, occurs most often in the young, but nevertheless, all classes and people of all ages may be stricken. I wish to call attention to the so-called primary Koplik spots in measles, which appear on the buccal mucous membrane before the general rash on the skin. In scarlatina the mucous eruption also appears previous to the skin eruption. The so-called strawberry tongue is familiar and the acute redness and swelling of the fauces and throat are easily recognized. In variola and varicella vesicles and pustules have been noted.

I do not wish to convey a wrong idea. If an eruption in any of the so-called general or toxæmic conditions which I have mentioned fails to make its appearance before the skin eruption, it may make its appearance concomitant with the skin lesions or even later.

Psoriasis of the mucous membrane undoubtedly is a rare condi-

tion, but Trautmann uses it as an example, so I deem it desirable to mention it. Considering the number of cases of psoriasis vulgaris which are met with, it would, in my opinion, be more common if it really existed. It must, however, be admitted that there is a possibility of its existence. I myself have never seen a case where the diagnosis has been positive. I mention psoriasis so that the diagnosis of this condition will not be made too quickly.

Lichen planus of the mucous membranes of the mouth is not uncommon. It frequently localizes itself on the tongue and I believe a failure in diagnosis oftentimes results until manifestations appear on the skin.

In this short communication I shall not attempt to describe the typical appearance of these lesions on the mucous membranes of the mouth or tongue. In the large majority of cases there is not the same appearance as on the skin, but much more indefinite in every way. Recently Joseph has described an unusual case of lichen planus of the mucous membranes of the mouth involving the tongue. As in his case, I have seen, several times, marked premonitory symptoms, when the patient has complained of severe pain in localized areas of the tongue and great discomfort on eating spiced or hot foods. Joseph's case occurred in a patient whom he had treated for syphilis and he considered syphilophobia on account of the absence of noticeable signs of lichen. In his case a sudden and acute eruption of lichen planus occurred over the skin. In my case, where the original symptoms were not so marked, only mild eruptions followed. However, in the recorded case of Joseph, following the gradual disappearance of the eruption, both in mouth and body, there was a violent and extensive recurrence, accompanied by general symptoms of malaise and fever. While the eruption the first time had been comparatively slight in the mouth, in the recurrence practically all the mucous membranes of the mouth was studded with partly isolated, and in some places, confluent white or grayish papules, and again, the marked burning sensation and pain reappeared on the tongue as previous to the original outburst. During the treatment slight arsenical intoxication set in, but later when arsenical treatment was again taken up, it was noticed that the character of the plaques in the mouth was variable. In the mornings they were scarcely noticeable, at noon they were very pronounced, and by night there was an almost total disappearance, all accompanied by a slight febrile condition.

There are cases recorded where this condition has commenced apparently with the most minute vesicular eruption or with extremely

small sized pearl-like efflorescences. These, so-called abortive attacks of lichen planus, are known to give atypical lesions. I am inclined to believe, however, that a diagnosis should not be made too quickly. If the efflorescences on the tongue are atypical, the diagnosis can only be established by the coexistence elsewhere on the body of typical lesions.

With these all are familiar so I will not describe them.

At the present time I have under observation a case of leukoplakia which is complicated with an acute lichen planus eruption over the parts of the tongue not involved by leukoplakia. I am convinced that the latter condition has, in this case, no relation to the acute eruption. However, it is an exceedingly interesting combination. Of course, it might be stated that this eruption is the remains of a severe previous attack.

Not so long ago leukoplakia was always considered in connection with mucous patches. I believe that it is regarded as syphilitic in origin by the general practitioner. In other words it is looked upon as a parasyphilide. Among our American authorities Hyde stood out prominently in the belief that there are other factors which must be taken into consideration. Clinically, in the very old cases, of long standing, I am inclined to believe that there is no positive sign by which those on a syphilitic basis can be distinguished from those on a non-syphilitic base. In the earlier, or more recent cases, I think it is possible, in many instances. Fournier and Levy-Bing, in a monogram on this subject, are strongly disposed to believe that all cases are founded on syphilitic lesions.

There are numerous authorities who regard leukoplakia as a primary disease. Hence, on account of the diversity of opinion as to the cause, the treatment is, naturally, on an equally unstable foundation. There are those who do not hesitate to state that the process regarded as leukoplakia by many—the secondary condition following syphilitic lesions of the mucous membranes—should be distinguished from the spontaneous appearance of bluish-white efflorescence on the otherwise normal mucous membrane. I do not wish to attempt to describe the characteristic appearance of these conditions, yet there are gradations, so that it is an absolute impossibility, sometimes, to recognize to which form a given case belongs.

If it were possible to come to definite conclusions as to the cause of this affection it certainly would be of benefit to the patients.

During the past year I have had three patients who have succumbed to causes, the basis of which was leukoplakia. Not until these came under my observation had I ever seen this outcome, although

I was perfectly aware of the old statement that this condition was to be regarded as a forerunner of fatal consequences. In one instance the patient had fissures in an almost entirely involved tongue. One of these fissures became infected, abscess formed, and a rapidly growing cancer followed. Excision of the tongue did not remove all the growth, and the individual died some six weeks after the operation.

The second case commenced on the lateral surface of the tongue, apparently as an erosion. It was removed surgically but recurrence of the growth and other operations followed, and the patient died within nine months of the first operation.

Both of these patients had received careful X-ray treatment covering a long period of time, without any avail. In one instance the patient had received injections of gray oil for a period of over nine months, without any apparent result. This was done according to the plan of treatment of Levy-Bing. Those who have ever seen the moulages in Paris, of these cases before and after systematic mercurial treatment must admit that Levy-Bing has demonstrated some remarkable results. I wish to add that these results have been a factor in causing Fournier to state that this condition rests on a syphilitic basis.

The third case was one in which the leukoplakia had existed for twenty-five years on the tip and dorsal surface of the tongue. There was a history of infection ten years previous to that. One year ago the tongue was amputated on account of superficial ulceration, five months ago the glands of the neck were removed and some weeks ago death occurred, due to marked recurrence of the growth about the neck.

Syphilis of the tongue, in any of its manifold manifestations, is exceedingly common and always of importance. There should, I believe, be a more thorough understanding of some of these conditions.

Syphilis, from many aspects, is the one general disease which should be differentiated from all others. Consider the possibilities in the way of lessening the contagiousity, of preventing destruction of tissue and of removing the lesions by treatment; and by thorough treatment putting the patient into such a condition that the offspring will show no taint.

This disease is also of importance from the standpoint of prognosis, particularly if it must be differentiated from pemphigus or even dermatitis herpetiformis. In cases of pemphigus of this type I believe the prognosis is usually fairly rapidly fatal.

I will not dwell in detail on any of the more common forms of

syphilis with which one meets, but I will take this opportunity to enumerate certain characteristic types which I meet in practice and which are always of the greatest interest to me. Syphilitic lesions of the tongue are exhibited both in the acquired and congenital forms of the disease. There is every gradation from the slightest hyperæmia to the deepest inflammatory condition, ulceration and necrosis; and again, there are both nutritional and epithelial changes occurring in this one disease.

Take up the subject of mucous patches, for instance. I will not burden you with their well known and characteristic appearance, yet, I wish to mention that there are certainly some atypical forms which are often met with and which ought to be equally considered. Four-nier has divided the mucous patches into the following groups:

1. Erosive type.
2. Papulo-erosive type.
3. Papulo-hypertrophic type.
4. Ulcerating syphilide.

It is not always possible, at a glance, to state clinically in which group a certain lesion belongs. It may be stated that this is not necessary. I will admit this. Yet, when one or more of these groups pass from one stage into another, the differential diagnosis from non-syphilitic lesions becomes more difficult. I do not wish to discuss the advisability, nor contradict the importance of examining the treponema pallidum or of making the Wasserman test.

In differentiating, it is necessary to consider a great many local as well as systemic diseases.

Of other forms of secondary syphilitic manifestations besides the aforementioned plaques, a specific erythema is not at all uncommon. I have noticed it frequently before the generalized eruption has occurred. Usually it is intensely red in color, and almost always sharply outlined. It rarely passes over to the hard palate, generally involving the posterior and lateral aspects of the tongue. In itself, it can scarcely be sufficiently characteristic to make a diagnose of lues venerea.

There have been noted in this stage vesicular eruptions over the acutely involved area, so that slight erosive lesions have been noted. These can only become pathognomonic when the base becomes slightly infiltrated and takes on the appearance of typical syphilitic plaques.

There may be syphilis of the tongue in the primary stage, as the initial lesion has frequently been noted on this organ. I shall not dwell on the mode of propagation or the importance of diagnosis. The

differential diagnosis is between tubercle, malignant disease, injury and infection.

As to the question of differential diagnosis in cases of mucous patches and the sequelæ, I do not wish to take this up in detail, but will only refer to the different types of leukoplakia which I have already mentioned and to psoriasis and lichen planus.

Warts of the tongue (I have reference to syphilitic condylomata) are seen in neglected cases of syphilis. They are flattened, irregular-shaped papules, confluent and involving oftentimes areas the size of a split pea, usually at the posterior and lateral aspects of the tongue, although I have seen them located on the anterior dorsal surface.

There is a condition of the tongue which is not unusual in the early stage of syphilis, called baldness of the tongue. It is given scarcely any notice, yet I am inclined to believe it is of sufficient interest for at least more than passing mention. Over the anterior dorsal surface, in patches increasing in size peripherally and often coalescing, one sees the complete removal of all of the filiform papillæ. The margins, in the cases which I have seen, have always been very abrupt. The fungiform papillæ remain present, but seem to undergo atrophy. This must not be confused with benign transitory plaque of the tongue, and must be regarded as an active process of syphilis. In my experience it occurs only in the comparatively early stage, and even while patients are under treatment. Yet syphilitic treatment has always restored the condition in those cases which I have had under observation.

In the later periods of syphilis the tongue is oftentimes affected in different ways, the involvement being either diffuse or localized, deep or superficial, acute or chronic. The condition is based on syphilitic inflammation and there are the usual changes, as follows: either softening and discharge or gummatous material or cicatrization of connective tissue. Naturally, all kinds of gradations may occur and all kinds of appearances may be given to the tongue. Fissures and ulcers of the tongue in these conditions have frequently been noted. Scars and furrows, naturally, follow in many cases. I will not go into a detailed description of the sclerosing and gummatous types of glossitis, as there is no end of variation, and they are quite familiar.

I believe, from what has been stated, that diseases of the tongue must be regarded as common; that it is our duty to differentiate syphilitic from non-syphilitic lesions, and if non-syphilitic, to determine whether they are due to general or local disturbances and

whether they are congenital or acquired. Naturally, in order to do this, it becomes necessary to inquire into the history; to examine the patient in doubtful cases not only on the skin, but often as to some of the organs, or even to make special examinations of the urine and blood. It certainly is not necessary to cite instances of such cases, as they are of almost daily occurrence in any extensive practice. The importance of diagnosing correctly is as important as in any other field of medicine. To diagnose syphilis positively from such conditions as pemphigus, where the outcome might be fatal, is certainly important to the physician, and to be positive in ascertaining the character of a non-syphilitic lesion, and thus freeing the individual from mental agony, is certainly to be regarded as of importance to the patient.

It is undoubtedly a fact here, as elsewhere, that the systemic conditions are of most importance to the individual. Yet there are numerous conditions of a local character which are of considerable gravity. Even the very benign conditions should receive attention. It is from these that every now and then serious results ensue. I know that a sufficiently detailed description does not follow of all these diseases to diagnose correctly in every instance; but it is only my desire to arouse greater interest in these questions.

Some of the local efflorescences are of a common type, nevertheless, I shall take them up as well as those that are more uncommon.

Aphthous patches are supposed, according to current descriptions, to be yellowish in color, not quite so opaque, more circumscribed, and more painful than mucous patches, and in the early stages, to be surrounded by an inflammatory zone.

In herpes, if I am not mistaken, the sides and back of the tongue are often involved, particularly in syphilitic patients whose general health has suffered. Yet these manifestations are not syphilitic. These lesions, on account of their location, quickly lose the appearance of what one usually understands by herpes, on account of the maceration and the insults which are offered by constant use of the tongue and by food. The typical arrangement of the herpetic eruption is rarely ever seen. However, occasionally one is fortunate enough to see this before they have fused and while the edges are still irregular and surrounded by an inflammatory zone. Strange to state, cauterization oftentimes is detrimental to their healing.

Injuries may produce conditions of the tongue which are at times not readily differentiated from luetic affections. However, consideration of the fact that they are often single, and also of their

location and of the inflammatory zone which usually surrounds them, aids in establishing their identity. I have in mind a case of a young man who was bitten during the sexual embrace.

Hydroa may occur only in the mouth, but it usually occurs both on the skin and mucous membranes, in paroxysmal attacks. The skin lesions, when present, aid in diagnosing the condition. If it is present only on the tongue, it may be an exceedingly difficult matter.

I have already mentioned aphthous stomatitis or stomatitis fibrinosa, but I believe it needs more than passing mention, particularly when there are numerous cases recorded which are accompanied by an exanthematous eruption and general symptoms. These, it is true, are usually seen in children, but adults are occasionally thus affected.

Herpes simplex is seen most often on the lips, but it may occur on the tongue or buccal surfaces. Naturally, the appearance differs as to its location. Canker sores are probably only herpes simplex. Often, as in simple "cold sores," there is a premonitory burning, followed by pain. These are often due to irritation, and they are also noticed to be frequently recurring, as in some syphilitic patients.

Fordyce, in 1896, described a condition which is now familiar. This extends along the mucous membrane as a line along the closed teeth, consisting of white or yellowish discrete bodies which are imbedded in the mucous membrane. In appearance they are similar to milia.

Herpes Zoster not infrequently invades the mucous membrane of the mouth. Whenever that portion of the fifth nerve, second division, is affected, the inner side of the cheek, tonsil, palate, inner side of tongue and cesophagus become involved.

A condition which is exceedingly common on the lips, rarely, if ever, extending over to the moist parts, manifests itself in pin-head sized or larger areas of a glazed appearance, one or more, causing no sensation whatever. They seem to come and go. Some remain for a few weeks and disappear and again recur. In some instances, in their course, they make depressions without any loss of tissue. Possibly they are a seborrhœic condition.

Lupus vulgaris originating primarily in the mouth is very rare. Most often the disease passes over from the nose or from the skin about the mouth. Under these circumstances it is not difficult to diagnose. In the mouth it may be papillomatous in character. It is always destructive, and therefore, loss of tissue is apparent in advanced cases. It is usually a comparatively slow process, of many

years' duration; while syphilis is usually rapid, particularly if it is of the gummatous variety.

Tuberculosis of the mucous membranes of the mouth is rare unless tuberculosis is present elsewhere in the body. I am inclined to believe it occurs most frequently in individuals suffering from tuberculosis of the lungs, and then infection occurs in the mouth at the site of some irritated area. Usually it presents ulcers with sharp edges and irregular borders on deep red bases, covered with light grayish films and surrounded by typical tubercles. Here it is possible to find the bacillus tuberculosis, but not in cases of lupus vulgaris. Naturally, the v. Pirquet test can be used to establish the diagnosis. In this type the disease is usually fairly rapidly progressive.

Skin lesions not infrequently are seen to follow catarrhal conditions by contiguity. Occasionally the process may be reversed—infection of the skin being transmitted to the mouth and producing erythematous and even vesiculo-pustular patches. I believe this has been shown to be the case, particularly in eczema and impetigo contagiosa.

There are other diseases, such as rhinoscleroma, which may involve the mouth. Of course, leprosy and glanders, both bacillary diseases, may affect these parts, but as they are both extremely uncommon with us, I shall not describe them. Actinomycosis may commence in the mouth. Ringworm and favus have also been known to occur. Such conditions as xanthoma and vitiligo and pigmentations have been noted and it is only necessary for me to mention them. There are, of course, many other conditions, of more or less rarity, and I will not presume to go into them at length, but wish only to point out some of the more common ones.

Papilloma of the tongue is exceedingly common, yet it rarely receives mention. In some instances it has been known to exist probably from birth. In the past three months I have excised four in four different patients. In all instances they had been present as long as the individual could recall. One was in a lady fifty-five years of age, and she complained that it gave her pain. In the other cases the tumors had been noticed but had not been the source of any trouble. Microscopically, they were all capped with hypertrophied epithelial cells, within more or less fibrous connective tissue and with the typical appearance of papilloma.

A five-year-old boy was brought by his mother for a condition of the tongue, which had, according to her, existed since birth. How-

ever, she seemed to think that in the past two years some progression had occurred. Some interference with articulation was present. Dollinger first described the condition to which this case belongs. He called it "Cystic Degeneration of the Fungiform Papillæ of the Tongue." Well toward the posterior and lateral borders of the tongue, covering areas about the size of a quarter, a grape-like appearance presented, the edge being well elevated and the center more prominent. Between some of the pin-head-sized nodules were flattened areas of interstitial substance. On palpation there was but the slightest kind of infiltration and it appeared to be a fairly superficial process.

I wish to add a few words on cancer of the tongue. There can be no question that chronic irritation and inflammatory conditions favor malignant growth. I have referred to three cases in mentioning leukoplakia, but I can also add chronic irritation produced by the teeth as a cause, particularly when an inflammatory condition, such as pyorrhœa, is present. Syphilis and smoking have always been regarded as exciting factors. Where it is within our field, I am inclined to believe that strict advice as regards hygiene and general care of this condition makes it possible to avoid serious consequences.

I am certain that persons with ulcerative process which commence on areas such as I have already described should not be put on probationary syphilitic treatment. Mouth care and luetic treatment often cause slight improvement and false hope. However, there are circumstances, naturally, when it can and should be done. Yet, if undertaken, it should not be kept up sufficiently long to permit any increase in the size of the new growth. In this particular class of cases the Wassermann test is to be recommended. Also, it is advisable to remove small pieces for microscopic examination, so that early diagnosis can be made. Fordyce recommends the use of a small punch, as it facilitates the removal of small particles.

By transitory benign plaques of the tongue I understand a condition, occurring usually on the dorsal surface and spreading to the lateral surfaces of the tongue, of patches which start as minute maculæ, their border usually defined sharply by the most minute red zone and just without and adjoining this a more pronounced grayish zone than normal. They spread peripherally and involute in the center. The lesions may become the size of a ten-cent piece, with borders more or less irregular and usually two or more become confluent. All the cases which I have seen have been in adults, mostly males. In my practice they have been exceedingly common. This condition is more or less permanent; I mean the lesions are present

practically all the time. However, they are transitory, coming and going. I have noticed that most of these individuals have wrinkled or furrowed tongues. These scrotal tongues, as they are also often called, are congenital. The furrows are deep and appear almost ragged. It has been my experience that whenever such a tongue becomes involved with leukoplakia, fissures form very readily and pus infection and abscess quickly follow, and it is these conditions that are particularly prone to lead to malignant growths. Whether or not this furrowed condition is a factor in the production of the transitory benign plaques I cannot state, but it would seem strange if it were simply co-existent. Another condition which is only rarely mentioned is the presence of marked, or apparently hypertrophied, fungiform papillæ. These, undoubtedly, in my opinion, assume this character in the more chronic cases. The patients rarely if ever complain of abnormal sensations of other symptoms. I have observed these cases in syphilitics as well as in those who undoubtedly never had syphilis. My experience has been the patients are never entirely free from this state.

Is there anything that can be done for this condition of things? I am inclined to believe that hygienic care is most desirable. The condition becomes interesting when syphilitic plaques complicate the chronic eruption.

Lingua villosa nigra, (black hairy tongue) is looked upon more as a curiosity than as an affection of, at least some, clinical importance. It may arise, for instance, at a time when patients are under syphilitic treatment. On account of its resistance to all known modes of treatment, it is regarded as being of importance by these individuals. By the laity it is sometimes looked upon as a forerunner of cancerous growth.

Although the light forms of this condition are frequently seen, the etiologic factors are still unknown. It has been noted in young and old of both sexes, but most commonly between the ages of twenty and thirty years. It is usually seen when patients are receiving treatment for general or local diseases. There are different theories as to its cause: (a) Hutchinson believes that it is simply due to accidental coloring; (b) it is believed by some that the disease is due to microorganisms, while there are equally many who believe that microorganisms do not take part in any way in the development of the condition. According to Belgrad: (a) Some say that black tongue develops from a black mould which grows on the surface of the tongue. (b) Others have the opinion that microorganisms

first produce an hypertrophy of the papillæ and then produce the black color. (c) A third group believes that microorganisms produce an hypertrophy of the papillæ but do not produce the stain. (d) The last group maintains that the black color is due to the microbes but that the hypertrophy is not. All other investigators who believe in the parasitic theory recognize that black tongue depends upon (a) an hypertrophy of the papillæ filiformes and (b) the black stain of these. There are some who believe that both the hypertrophy and the black color are produced by parasites. Now, there have been many other suggestions as to the cause. For instance: (a) pigment granules which are identical to those found in the scrotum at puberty; (b) hyperkerotosis of the epithelium of the papillæ filiformes; (c) disturbances of the vaso-motor nerves; (d) disturbances in trophic nerves; (e) drying of the papillæ; (f) drugs; (g) chemical influence of foods; (h) certain bacteria which act as chemical agents. It is possible to theorize in the different cases with which one is familiar, but it is almost needless to state that in no individual case has the absolute etiologic factor been proved.

In regard to the diagnosis, I think it can be stated that the condition accompanies either acute or chronic diseases. It is known to be intermittent, and has also been seen to exist for periods of twenty years. Now, when certain symptoms are present when the condition is efflorescent, and again, when they disappear with the black tongue, can it be stated that the symptoms are due to this pathological condition—paræsthesia, sensation of dryness, tickling, even pain, odor produced and sense of taste weakened? In establishing the identity of "black tongue," it is only necessary to note the hypertrophy of the papillæ filiformes and their dark color. Every dark tongue does not belong to this class, for normal tongues may be temporarily stained. I know of no other condition with which it can be confounded.

A word as to the treatment—from what I have been able to note, I believe that peroxide of hydrogen, frequently applied, with a swab, has been beneficial. Formerly, scraping and even cutting with scissors was advised, also the use of all kinds of caustics, as nitrate of silver, chromic acid, trichloracetic acid. Naturally, those who believe in the strict parasitic theory depend upon antiparasitic remedies, while those who believe in the theory of hyperkeratosis apply horn-dissolving preparations. One fairly marked case which I had under observation, which gave a distinct history of syphilitic infection some seven years previous, with but little treatment during this time, dis-

appeared during a course of injections with gray oil. It had existed for several years and there has been no relapse since. Naturally, this individual gave himself strict attention as to oral and general hygiene during the period of active treatment. Why did this condition "clear up" under antisiphilitic treatment?

It is impossible to go into any great detail in an article of this kind, where I have hurriedly touched upon so many conditions, but I trust that I have brought out some points and that these suggestions will at least cause further scrutiny on the part of those who only occasionally meet with cases of this character.

1616 MALLERS BUILDING.

TOXEMIA AS A STIMULUS IN LITERATURE.*

By CHARLES B. REED, M. D.

It may sound paradoxical to claim that the presence of a poison in the circulation could result in anything but unhappiness and poverty, yet there is much evidence that such a condition, whether wittingly or unconsciously acquired, may give a strong impetus to literary production.

To establish the thesis it is necessary to show that poisons (toxins) and similar morbidic agents may and do exercise a definite and inspiring influence upon the imaginative and creative faculties and that such toxins at appropriate times are present in the blood.

As a preliminary, let us consider one of the simpler intellectual processes. To secure the greatest satisfaction, not alone in operation, but especially in results, the brain should work harmoniously—all the faculties should functionate in close correspondence if not in actual unison.

This power of concentration is innate in some individuals, and may be acquired by others with considerable effort, while to others indeed it is not only unattainable but entirely unknown. The first possibility is the most desirable and rare, and the last, while common, is valueless. The intermediate form concerns us here, for the acquisition of this power is attended by many interesting circumstances and not a few failures.

The most human and effective degree of the accomplishment is characterized by Murisier as the "systemization of the personality." Systemization may be acquired in many ways. For instance, in the course of growth an irresponsible boy, whose thoughts, ideas and feelings, like a weathercock, respond to external stimuli through the senses, is suddenly thrown upon his own resources. He accepts the challenge, and in consequence develops a self-reliance and a decision of character that put all his actions under the dominion of his co-ordinated faculties. He assumes control of his personality by systemizing his divergent impulses. He correlates his subjective ideals or feelings with objective conditions and has a working hypothesis. A similar but more dramatic transformation may follow a physical injury, as the experiences of Cervantes and Loyola so excellently illustrate.

The most numerous and probably the best examples of the condition are to be found among the reactions to emotion. Strong deep

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feeling systemizes the personality and gives it stability, intensity and tenacity. Such factors are love, hatred, ambition, greed, religion and transiently profound anger. During periods of unusual stress or tension, as from war, national expansion or disaster, from private grief or great love, many minds are emotionally exalted. In consequence, as history shows, the literary product is increased and improved as compared with times of mental peace and commercial prosperity.

Without overlooking the almost universal sway of love in this relation, it is probable that among the Christian nations, both in war and peace, the most effective systemizing emotion is religion. Its influence is as widespread as love and far more lasting. Moreover, in this abundant field of emotional experiences it is easy to find one that exhibits the significance and mode of action of systemization. Conversion is a conspicuous instance. An individual who has given little or no attention to religious matters or whose thoughts have been confused by conflict of the sects or the claims of antagonistic zealots may meet with a crisis or an experience that stirs his feelings or awakens his mind to some new and appealing aspect of the subject. He ponders over this, and all at once it becomes convincing—he accepts it as a truth and immediately his faculties marshal themselves into harmonious ranks, permanently obedient to the dominant emotion. Henceforth all acts, thoughts and feelings are regulated and governed by this polarized state of the personality. Among its happiest phases is an increased sense of power and the recognition of an inner feeling of harmony that the initiate technically terms peace. The individual is happy, not like the gourmand or the voluptuary who has satisfied his appetite, but like him who hears tidings of great joy, the gambler successful in play or the ambitious man whose hopes are realized.

The same result is achieved, at least temporarily, by prayer. The individual abandons or compels himself to a period of undisturbed meditation—solitary concentration. The tense feelings relax, the faculties align themselves harmoniously, the distractions are composed and a feeling of peace and comfort ensues. Out of this peaceful mood, out of this orderly activity of the faculties, there comes frequently a solution of difficulties so clear, so rational and so sudden withal that it may well be regarded as divine in origin.

Having once experienced the joy and satisfaction of mental harmony, the individual next strives by propagandism to bring his human environment into a close and sympathetic relationship and to adjust his material surroundings so as to protect his inner happi-

ness from hostile intrusions. In old communities and faiths, or among men of settled habits and convictions, the irritation and resentment felt at the appearance of new ideals and methods is due to the disturbance of this painfully acquired unity of thought and feeling or to the fear that it will be disturbed.

In a state of unification, when every faculty is contributing to the general good, the work is done so easily and pleasurably that the most as well as the best is accomplished. It happens, however, that some personalities, from the very first, are "badly cemented," like the so-called "artistic temperament," and even in the presence of joy, grief, or such major emotions as religion or intense interest in one's vocation, there exists a strong tendency to relapse into the unsystemized habit. In these cases the faculties work inharmoniously, there is much jar of the mental machinery. Discomfort, unhappiness, waste, neurasthenia and various functional disorders develop which formerly were attributed to the Evil One. When, therefore, a dominating idea, personality or influence produces systemization under such conditions, it is easy to realize how those miraculous cures are wrought which forever, among the ignorant, form the basis and support of quackery, both in medicine and in religion.

It is not necessary to follow this part of the subject further. Its importance is manifest, and to one who feels or appreciates these mental differences any effort or any sacrifice seems demanded if thereby the anxieties, the vagrant and shapeless longings of an unfocussed mind can be replaced by the blessings of systemization. In the absence of a compelling emotion or interest, the individual endeavors to reproduce the condition by artificial and external means. With so docile an organ as the brain this can be accomplished in several ways, but the simplest, the quickest and readiest at hand is by drugs.

It is a physiologic law that all substances which tend to depress and destroy the functions of the nervous system begin by acting as stimulants. By virtue of this, certain poisons—toxins—which may be in reality only variable forms of food-stuffs, have the power to create a harmony of the faculties with the same sense of peace and well-being that one derives from prayer, but the effect is no more permanent. The drug also requires frequent repetition and, like all artificialities, may in time lose its effect. Among literary workers such experiences are especially common, but for clearness it is desirable to cite some extreme instances.

Coffee may be taken as the type of these substances, for its es-

sential qualities are so well defined that one critic has claimed the ability to trace throughout the works of Voltaire those portions which came from coffee inspiration. Balzac also is known to have been devoted to this stimulant and frequently used it for fifteen or twenty consecutive hours of toil. Moreover, its harmonizing effect is by no means restricted to the solitary. Friends celebrate their happiness and enemies compose their differences under its genial influence, while whole communities have been systemized in the banquet hall or the coffee-house.

Tea acts similarly and suggests De Quincey, who drank it from eight o'clock at night till four in the morning when engaged in his literary work. He called it "the beverage of the intellectual." Dr. Johnson also produced his dictionary with the support supplied by its excessive use. The knowledge of its power is not new, for a learned Chinese philosopher declared over a thousand years ago that "tea tempers the spirits, harmonizes the mind, dispels lassitude and relieves fatigue." Similar praises sung by the votaries of tea and coffee are not exceeded by the hymns to the saints among the old religionists.

Tobacco is another of the milder aids whose use is well-nigh universal. Maeterlinck is a recent and conspicuous example of the literary man who confesses that for years he was unable to write his best without smoking. He indulged himself with increasing amounts until he found that, instead of rousing the brain to activity as before, the enormous dosage was acting as a depressant, so he replaced it with a de-nicotinized leaf that satisfied in a measure the irresistible mechanical craving.

The choice of a systemizer is largely a question of taste. Balzac, content with his coffee, spoke of tobacco with horror, and Victor Hugo rejected it from a conviction that smoking converted thought into reverie.

In many instances, however, the trifling assistance afforded by these toxins is insufficient or they lose their effect in time, even when used in enormous quantities, and then stronger agents are required.

De Quincey for many years cemented his personality with opium, which he preferred to wine. He says: "Opium introduces among the faculties the most exquisite order, legislation and harmony, sustains and reinforces the self-possession and communicates serenity and equipoise." Again he states: "If in early days I had understood the subtle powers of opium to tranquillize all irritations of the nervous system, to stimulate the capacities for enjoyment, and to sus-

tain for twenty-four consecutive hours the else drooping animal energies—most certainly knowing or suspecting this I should have inaugurated my opium career in the character of one seeking extra power and enjoyment rather than one shrinking from extra torment.”

Coleridge and many others whose histories may or may not be known relied on opium, while still others have resorted to more insidious or intensive poisons like strychnine, arsenic, cocaine, chloral or hashish. De Maupassant relates that every line of *Pierre et Jean* was written under the influence of ether intoxication. It is probable, however, that the greater number of brain workers have organized their personalities like Poe, Burns, de Musset and Glück on some form of alcohol.

The action of this drug on the nervous system resembles physiologically that of the rest of the group. The effect is best described by James, who says: “The sway of alcohol over mankind is unquestionably due to its power to stimulate the mystical faculties of human nature, usually crushed to earth by cold facts and dry criticism of the sober hour. Sobriety diminishes, discriminates and says *no*; drunkenness expands and says *yes*. It is, in fact, the great *yes* function in man. It brings its votary from the chill periphery of things to the radiant core. It makes him for the moment one with truth. Not through mere perversity do men run after it. To the poor and unlettered it stands in the place of symphony concerts and literature; and it is part of the deeper mystery and tragedy of life that whiffs and gleams of something that we immediately recognize as excellent should be vouchsafed to many of us only in the fleeting earlier phases of what in its totality is so degrading a poisoning.”

In *The Right of Way* also we may recall Charley Steele, cold and cynical, where he soliloquizes after his wonderful speech: “What a discovery I have made! I was dull, blank, all iron and ice; the judge, the jury, the public, even Kathleen against me; and then that bottle there—and I saw things like crystal, I had a glow in my brain, I had a tinge in my fingers; and I had success.” Thus he rose above his environment, he secured control of his personality and all the stiff, inactive, inhibited faculties temporarily fell into harmonious relation and began to work.

II

Hitherto we have limited our inquiry to one point, the natural or artificial systemization of the personality as a means of promoting intellectual effort; and to the writer no proposition could be more evidently true, for this is the state wherein the masterpieces of the

world have been executed. That this condition can be and is produced by certain toxins I think would be admitted by the most skeptical reader. It remains then to correlate these findings with our theory. First, however, let us pursue our examination a little further and discover, if possible, a physical source for the toxins and make the connection quite clear before we reach the application.

It is well established that toxins are formed in the body as a product of tissue change and under ordinary conditions they are excreted or absorbed without attracting much attention. Whether toxins are potential food stuffs, or reagents simply, cannot be stated, but that they are powerful factors in the bodily welfare is not to be denied. For instance, we may mention carbon dioxide as not merely a poison, but one that is really essential to life.

If one should inquire why you breathe, you would probably make the obvious but incorrect reply that the body needs oxygen. Oxygen indeed is necessary, but however great the necessity it would never be satisfied if the chemical processes of the body did not elaborate an excess of carbon dioxide. This toxin circulates in the blood, stimulates the respiratory centre and compels respiration, with the result that oxygen is taken in.

Getting one's "second wind" is another remarkable transformation through toxemia. "In this surprising phenomenon," says James, "the fatigue gets worse up to a certain point, when gradually or suddenly it passes away and one is fresher than before. We have evidently tapped a level of new energy masked until then by the fatigue obstacle usually obeyed. A third or fourth wind may supervene." It is an interesting physiological fact that among paired organs one functionates better than its twin, and therefore assumes the leadership and does a larger share of the work. This is as true of the cerebral hemispheres as of the ears and kidneys, while the so-called "master eye" is a familiar example that has long been recognized. The explanation of "second wind" still further illustrates the physiologic advantages of toxins.

From tissue activity the various waste products in the form of toxins are squeezed out of the cells into the intercellular spaces and are taken up by the circulation. The quantity increases until the system is saturated and fatigue ensues. With a continuance of exertion the toxins accumulate until they set in action a new process whereby an anti-toxin is formed. The fatigue toxin is neutralized, the balance restored and the functioning tissue, indeed the entire organism, is lifted to that higher level of performances commonly

called the "second wind," while in the case of pairs the associated organ is brought into powerful and harmonious activity with its fellow. Physical systemization has been effected. Although not entirely germane, it may not be uninteresting to mention that natural sleep is nothing more than a stuporous form of unconsciousness resulting from an accumulation of toxins. It is immaterial whether toxins develop from ordinary tissue change like fatigue or from over-eating, from under-excretion or over-production.

An entirely different class of toxemias results from germ invasions. In these cases, however, the product is a foreign body, and when taken up by the circulation it must be and is oxidized or burnt in an intricate chemical process accompanied by a liberation of heat which is called fever.

None of the phenomena hitherto reviewed is pathological, and none is necessarily attended by fever unless exhaustion supervenes. Even in disease the elaboration of toxins may or may not be followed by a rise of temperature, since this depends upon the character of the toxin as well as the ability of the body to dispose of it. In certain cases the physiologic effect of a toxin may be quite easily observed or predicted. Such a substance, more or less diluted with blood, flows over the sensitive cerebral surfaces; the rapidity of the associative functions is slightly increased, the person feels extremely well and his conversation is coherent and brilliant. If the stimulation is pushed up to the point of systemic supersaturation, then coma, delirium or some intense and uncontrollable excitement may ensue in which the ideas tumble over one another in rapid confusion. There are authentic instances of coherent poetic composition during delirium; but usually when stimulation is carried to excess, wreckage of the machine will follow. The disorder generally presents one of the forms of insanity of which the psychosis of exhaustion is the type. It is not difficult, therefore, to see that the two varieties of delirium described by Plato may differ only in degree and in the amount of toxin thrown out or absorbed.

To carry the argument to its logical end would lead us into the enticing realms of ecstasy, possession, pythouism and other forms of divination that are closely related to the fixed idea. Here also would belong that spirit of prophecy so frequently present just before death, as in Shakespeare's *Henry VI*, when the intellect is cleared of all distortions and the systemization is untrammelled by a consciousness of external objects. This investigation is beyond the bounds of our inquiry, so we must return to the question of disease, where

the toxic relationship is more apparent. Let us now consider the clinical evidence.

III

Among the non-febrile affections that are under suspicion as stimulants to intellectual activity may be mentioned asthma, which is represented in literature by Macaulay, and in statesmanship by William III. In confirmation, however, we can present no data except the numerous cases that might be quoted.

In this category also is gout, which takes its origin not from micro-organisms, but from disturbances of the bodily metabolism, and is characterized by fever only at the crises. It is fallacious, but interesting, to find that, while this disease formed barely one per cent of the chronic medical disorders of the past, over five per cent of its victims were literary workers. The effect observed is similar, as we shall see, to that found in bacterial diseases, but the method of operation is quite different. In place of the optimism and feverish intensity, there is a massive patient energy; without haste, to be sure, but also without rest.

One writer goes so far as to compare these classes with presumptively normal individuals and asserts that those afflicted with gout, judged by their books, are superior in imagination, style and intellectual power to any equal number of healthy workers who can be chosen. Without attempting to substantiate this predication, the evidence shows that Gibbon was urged onward by a stately but irrepressible momentum for which his literary occupation afforded only a partial outlet.

Bulwer Lytton's irritability and melancholy were widely known, and so, too, was his desperate devotion to work and tobacco. Gibbon and Lytton were great sufferers from gout and thoroughly exemplify the class which included Landor, Campbell, Milton, Steele, Sydney Smith, Dryden, Fielding, De Foe and many others in literature; Rubens and Claude Lorraine among the painters; actors like Charles Kean and statesmen like the Pitts.

These unhappy owners of creative brains were the victims of their organizations. They were compelled to work by the toxins they elaborated, and it is not too much to say that the periods of active production probably stood in close relation to the ebb and flow of the toxic tide. Just as the mental state of the diabetic is active and clear in inverse proportion to the amount of sugar secreted, or as the chills and fever of the malarial patient correspond to the successive generations of the malarial organism, so the fluctuations of the

artistic temperament may easily correspond to the variations in quantity of an energetic, if unknown, toxin. In these highly sensitized beings every degree of change is temperamentally well marked and varies from gloomy self-reproach and transient melancholia to the exaltation of a conscious inspiration. So, too, when the poison of gout is in the blood the mind is overclouded; when it focusses in the joint the mind is clear and vigorous.

A gouty patient told Wigan (Nisbet) that at times another person seemed to be thinking with his brains and telling him things he knew to be false, and that he had great difficulty in restraining himself from uttering these unworthy sentiments as his own. He got continually worse, until suddenly the gout precipitated in his toe, his brain freed itself from the delusions and his reasoning became extraordinarily acute.

In the non-febrile class must be mentioned the experience of Parkman, since it is pertinent to the general subject, although the nature of his affliction apparently was not determined. His biographer, Farnham, says that his difficulty was not in arousing but in restraining his faculties. His most intimate literary companion, Dr. Ellis, wrote that his maladies intensified his impulses to exertion and mental application, while they limited the hours he could wisely give to reading and writing.

Heine's case was similar. William Sharpe says that: "In 1846 the mysterious pains had greatly increased and it had become evident that something more terrible than paralysis had taken possession of the enfeebled frame. But as the body died the mind more gloriously effloresced, like the fantastic flower of Borneo, which displays its richest blooms as the stem rots to the root. New ideas, fresh impulses, creative instincts arose within him; his mental horizon widened, the atmosphere became rarefied, the perspective more alluring and vast. Yet it was during the last three years of suffering that the genius of the poet reached the climacteric. It was then he produced that wonderful series of poems collectively entitled *Roman-cero*. Here every phase of Heine's genius is visible; here he is sombre, imaginative, tender, graceful, ironical, exquisitely delicate and grossly cynical, and here moreover the variety and extent of his metrical skill must astonish and delight the critic." During the same period he produced a libretto entitled *Der Doktor Faust*, a prose phantasy called *The Gods in Exile*, *The Confessions*, *The Last Poems*, *The Atta Troll* and *Vermischen Schriften*.

In considering toxemia as a stimulant we must remember that

cerebral congestion alone is an excitant to cerebral activity and some writers have resorted to mechanical aids to obtain this favorable condition. Schiller with his feet in ice water and Shelly extended on the floor with his head close to an open fire are convenient examples. It is, of course, impossible to say how much of the effect is due to congestion from fever and how much to the toxin that gives rise to the fever.

It was known to the ancients that a slight fever stimulated cerebration, or as one author says: "*Febris modica, idearum fecunditatem et eloquim dat.*" This opinion was confirmed by Albrecht Haller, the eighteenth century physiologist and poet, who observed several times how much more freely his verse flowed when he was feverish.

Other factors undoubtedly influence the result, for individuals react differently to the same or different toxins, and it is probable that no two diseases or individuals evolve toxins in the same quantity or potency.

IV

It is among the febrile affections that the stimulating qualities of toxins are most clearly exhibited. Pulmonary tuberculosis may be selected as the type. This disease is offered in support of the thesis not alone on account of its bacterial origin and the peculiar suitability of its toxins, but because its frequency and chronicity provide ample opportunities for study.

The general appearance of the individual is quite characteristic. The centres of life are all in an exalted state, the eyes shine with a brilliant but unnatural lustre, and the cheeks burn with the typical hectic flush. The mind acts with clearness and force—with that quick sympathetic responsiveness which makes the carrier of this disease so entertaining and companionable. The world looks as bright and the prospect of recovery as certain to these optimists as Heaven to the religious enthusiast. The nervous system is keyed up, the blood pressure high, the sexual centres are strongly stimulated and all the tottering functions of the body are driven relentlessly forward.

In exemplification of these effects extracts from the letters and biography of J. Addington Symonds may be presented. These interesting observations on his physical condition and emotional states begin in 1869 and last for seventeen years. Only a few of them need to be quoted, prefaced by some external evidence. A pupil of Symonds says: "We had before us the example of a man continually struggling with ill health, grievously handicapped in the career of

life, yet never complaining, but rather rejoicing and dedicating himself heart and soul, mind and body to the achievement of the work." This one sentence describes perfectly the impression which such a patient usually produces among his associates. What a picture of Stevenson!

Symonds himself says: "At present I am plagued by a constant desire to use my brains for work, to store up knowledge for future use." In 1870, shortly before his own death, Dr. Symonds said to his son: "You have just enough nervous strength for the common requirements of life. You cannot draw upon the fund of energy without peril to your health." "In fact," says the son, "he had resigned all expectation of my making a mark in the world, for I had now reached my 31st year. Yet what I still contained of slumbering force was now on the point of bursting into sudden activity." Again in 1874 he says: "These chest colds do not agree with sober work, but they do not exactly disagree with some sorts of irregular intellectual activity—so I have been in a blaze of poetry of late, reading and writing." When we consider that what a tubercular patient calls a "cold" is in reality an exacerbation of his disease, the statement is significant.

Then in 1876 he speaks of the amount of work accomplished and the conditions as follows: "The summer was spent in hard work upon the third volume of *The Renaissance*. My physical vigor considerably abated. I took severe colds, which left me exhausted. . . . We went to Riederlap, and there, in the midst of damp fogs that crept into our rooms through the chinks in the log-built walls, *The Renaissance* advanced rapidly—at a feverish speed which told of diminishing energy. My father's dying prediction had been fulfilled. The tax upon my nervous strength during four years of intense and feverish industry exhausted my constitution."

The next year he observes: "Chronic fever was upon me and I had the recklessness of the disease—the curious fretful energy of one tormented by a persistent drain on his vitality." A little later, while recovering from a dangerous hemorrhage and arranging his affairs for the end which he thought was impending, he remarks: "For the rest I exercised my literary faculty in such light work as I could do—translating the sonnets of Michael Angelo and Tommaso Campanella. Never have I felt happier in the soul than during the weeks when my life was hanging by a thread and when the sensuous faculties remained in abeyance—the real man, the self that is immortal, being left open only to intellectual influences."

Three years afterwards he adds the following testimony: "I think an exaggerated report of my illness has got abroad. On the whole the doctor believes my lung better than it was last spring, but I have had six weeks of very bad health. In the last eight months I have written two volumes of *The Renaissance in Italy* (except three chapters). I have prepared the American edition of my studies of the Greek poets and all my Italian sketches. To the new English edition of *The Age of Despots* I have added one hundred pages, as well as a great amount of minute alterations. So you see my hands are full. If I did not work with almost abnormal facility I should not have got through with the mere grind. But I am afraid that this facility does not mean less but more rapid and instinctive cerebration than in the case of slower workers."

In 1882 he writes from Davos to H. F. Brown a little summary of his condition in which this occurs: "If I am doomed to decline now I can at least say that in the five years since I came here dying I have had a very wonderful Indian summer of experience. The colors of life have been even richer, my personal emotions even more glowing, my perception of intellectual points more vivid, my power over style more masterly than when I was comparatively vigorous. It seems a phase of my disease that I should grow in youth and spiritual intensity inversely to my physical decay. It is almost pain to grasp the loveliness of the world with so much intensity when the body is so dragging."

During the year 1886, five years before his death from tuberculosis, he completed Volumes VI and VII of *The Renaissance in Italy*, wrote a biography of Sidney for the *English Men of Letters*, a *Life of Ben Jonson* for the series of *English Worthies*, prepared a volume of selections from Johnson, an edition of Sir Thomas Brown, an article on Tasso for the *Encyclopædia Britannica*, and began and finished the translation of Cellini.

Without offering it as an apology, Symonds mentions that during the latter part of this time he was troubled by an inflammation of the eyes which prohibited their use and made his work on the Cellini extremely difficult. In concluding the extracts, it is proper to add that during the period to which these references apply two of his four children were born. Symond's letters most happily support our argument, because his habit of introspection supplied him, and therefore us, with much personal psychology and many subjective reactions that others either have not discovered or have not published. Novalis, Keats, Sterne, the Brontë sisters, and especially

Sidney Lanier and R. L. Stevenson, would furnish many contributory facts if space permitted.

Two or three striking testimonials from Stevenson, however, must be included. For instance, while prostrated by a pulmonary hemorrhage he wrote out in three days the first drafts of *Jekyll and Hyde*. During this period his toxic stimulation was so great and his mental systemization so complete that he neglected for hours at a time to remove the thermometer that had been placed in his mouth. To this should be added his wife's observation from Hyères. She says: "After a terrible hemorrhage he fell a victim to sciatica and was temporarily blind from ophthalmia. All light was excluded on account of his eyes and his right arm was bandaged to his side on account of the hemorrhage. To circumvent fate he had a large board covered with paper laid across his bed and on this or on a large slate he wrote out, with his left hand, most of the poems in the *Child's Garden of Verses*."

The positive value of these citations is emphasized by evidence from Vailima that is highly important, since it exhibits the mental conditions prevailing in the absence of the stimulation upon which he had learned to depend. Under the influence of a favorable climate and life out of doors Stevenson's lungs improved greatly and "his bodily health and vigor," as Colvin says, "kept at a higher level than during the previous year." The tubercular process was apparently arrested. What was the result? Necessarily the quantity of toxins thrown out was diminished, or at least did not exceed the dosage to which he was accustomed and he keenly felt the deprivation. Colvin says that during this year (1894) Stevenson found himself unfit for serious imaginative writing, and the consciousness of the loss caused him many misgivings. On January first Stevenson wrote Charles Baxter about his new and, to him, distressing development in the following words: "I am come to a dead stop. I never can remember how bad I have been before, but at any rate I am bad enough just now, I mean as to literature; in health I am well and strong. I take it I shall be six months before I shall be heard of again." Unhappily his death from apoplexy eleven months later interfered with the further development of our theory, but the writer does not doubt that a subsequent exacerbation of the tubercular infection would have been accompanied by a period of unusual literary activity.

Even in childhood Stevenson was peculiarly liable to dream during sleep. This phenomenon which, like Symonds, Hearn and other "sensitives," he possessed in an exaggerated form, is now

recognized as a frequent expression of toxemia. Is it illogical, then, to assert that the exuberant fancies which throng such easily systemized brains during waking hours are largely toxic in origin?

In addition to the suggestive symptoms hitherto mentioned, Symonds frankly confesses that he was compelled to labor unremittingly except when complete exhaustion supervened. Whether this exhaustion signified a toxic supersaturation or one of the lethargies that the disease sometimes exhibits cannot be stated, but on such occasions he secured the only respite possible this side of death. The restless intellect conceived new schemes with unceasing profusion and the result in regard to time expended is a literary output of exceptional quantity. The quality, too, was greatly improved since it represented the best the brain could be incited to produce—it was the very essence, subtly refined, of all that high courage, vivacity and spirit intense and rare.

Among the members of this extensive class we may mention as types the actress Rachel, the artist Albrecht Dürer, and Chopin, the musician.

V

Other forms of microbic disease with or without suppuration and other toxic fevers may produce similar conditions. In these as well as in non-bacterial disturbances the effect is not infrequently associated with depression of the feelings rather than exaltation. This variation in no way controverts the theory, but rather conforms to the recognized course of what may be termed inspirational composition. It would appear that the results of functional performance, especially in artistic fields, are definitely tinged by the optimism or pessimism that characterizes the action of the toxin.

In mild intoxication, using the word in its proper sense, the fancy may be floridly stimulated or a somewhat different quantity or variety of toxin reveal its physiologic effect in a true, poetic melancholy, while if the coefficient be still further increased the individual will exhibit the subjective and objective signs of disease.

Unfortunately the identity of the toxins is entirely unknown, and yet from a literary standpoint it must be important, since many toxins produce a sense of exhaustion. In this connection an illuminating comparison can be made between the stimulating toxins of tuberculosis and the stupefactive intoxications of an ordinary tonsillitis.

Experiments on cerebral tissue with different poisons and stimuli show that when the sensory centres are predominantly irritated the

result is visions, dreams and non-productive reveries that may end in stupor, while the excitation of the motor centers produces a fussy, bustling, purposeless activity. If, however, both respond equally, then coherent effort is initiated, which may find expression in art, literature, philosophy or generalship.

It is hardly necessary, except for emphasis, to call attention again to the salient points in these cases. The mental irritability, the insatiable desire to functionate, the immense amount of work accomplished, the ease and pleasure in its performance and the inevitable unhappiness when the mind reacts from the systemized high pressure—these are significant symptoms of toxemia, whether arising from within or without, from emotion or drugs, from food-stuffs or disease.

It may be urged against the thesis that the examples selected were chosen cunningly, but it is hardly possible on the contrary to choose subjects who are not addicted to artificial systemization in some form or degree. The coincidence of certain diseases with intellectual and artistic achievement is too frequent to be accidental and too potential to be without significance.

It may be urged, too, that the use of drugs for this purpose or the presence of disease is by no means limited to the artistic class, and yet the number of artists is not thereby increased. Many have achieved eminence in the arts without a demonstrable pathology, but it is possible that a larger success might have come earlier, although not so pleasantly, if the normal functions had been intensified by a toxemia. In the case of Wordsworth it is not wholly inconceivable that a stimulating toxin or an addiction to alcohol might not have caused an uprush from the subliminal consciousness that would have added the vital spark to much that seems prosaic and uninspired.

We delight in the picture of a man fighting gallantly against desperate odds, and is it not comforting to believe that out of that fierce mêlée the work of his life may emerge chastened and elevated, a work stronger and clearer in text, a message enhanced and supremely refined?

We are not prepared at present to insist that toxins are essential to achievement, nor that an obscure toxin will convert mediocrity into genius, but rather to suggest that the presence of such a substance in the circulation may, and does in many instances, accelerate and intensify the expression of existent intellectual tendencies. It is proposed that the artistic unit has not attained his eminence in spite of a serious toxemia, but possibly on account of it.

In estimating the importance of the tubercular toxin we must remember that this disease is rarely found alone and unmixed with other infections. This would suggest the possibility that other agents might be, if not leading, at least accessory factors in the result. It happens, however, that the tubercular toxin has been isolated and is employed daily in the management of tuberculosis. Its physiologic action has been repeatedly observed and its stimulating property is incontestable.

In conclusion we must acknowledge that many of us feel deep regret for our favorite author when he has been swept by a ruthless malady into an untimely grave. We lament the loss of those possibly productive years, and yet while de Musset lived to the age of forty-seven, he produced nothing of consequence after the age of thirty, despite every kind of stimulation. Is it not plausible that other authors may have completed their careers, or nearly so, at the time of death? May not the sum of literary activity be practically the same as if the author lived longer, except that it was crowded into a briefer time?

Besides the sense of personal deprivation, is there not some ground for satisfaction? Instead of mourning the loss of what might have been, may we not rather congratulate ourselves and the author that under the stimulating influence of a chronic and ultimately fatal disease he has accomplished a work probably larger in quantity and certainly better in quality than under the leisurely conditions of health if he had outlived his expectancy?

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Editorial.

THE MILK ORDINANCE.

An ordinance prepared by the Department of Health and the Council Committee on Health Department, providing among other things for the pasteurization of all milk to be sold in the city which does not come from properly equipped, inspected and approved dairies, was referred back to the committee by the Chicago City Council Monday, July 22nd. The Council at this meeting adjourned for the summer.

The need for the ordinance was caused by an enactment of the present State Legislature that in effect forbids the city of Chicago to require a tuberculin test of cows whose milk is sold in Chicago.

The only way to be sure that milk which may be infected with tuberculosis, scarlet fever, diphtheria, typhoid fever, or other disease is safe, is to pasteurize it or cook it. Illinois has no law restricting in any way the traffic in tuberculous cattle. Wisconsin, a neighbor-

ing state, has such a law; hence, Illinois has become a dumping place for infected cattle. This creates a danger to the health of Chicagoans, and the need for some defensive action is imperative.

Since the defeat of the ordinance in the City Council, public spirited organizations and the daily press have taken the question up, and the public have become aroused. A mass meeting was held in the council chamber on July 31st and steps taken to appoint a citizens' committee of twenty-five to study the whole milk question. The ways and means committee of the Association of Commerce were addressed on the same day by Dr. Gottfried Koehler, assistant commissioner of health, and by Dr. W. A. Evans, formerly commissioner of health. If all the people of Chicago could have heard those addresses, the pasteurizing ordinance would soon pass or the public would stop drinking milk altogether.

In all fairness to the members of the City Council it must be said that the general public are not informed upon the dangers of infected, dirty, or stale milk. The average man believes that milk is milk so long as it is white and not sour to the taste. Those who are informed fully are limited to such as have been students of the question. The need of the hour is to spread broadcast in plain simple phrase the full story of cow's milk as a food, and especially as to its limitations as a food.

That cow's milk has been overestimated as a food and underestimated as a carrier or cause of disease, we have not the slightest doubt. The flat statement so often made that milk is the most useful of food products has many exceptions. Another bit of advice too often given to the poorly nourished is to drink freely of milk. There are many persons and many children who do not digest milk readily and can never thrive upon it. Nature intended milk as infant diet, not as a diet for adults. Nature provides that milk as a diet of infants go direct from the mother to the offspring without exposure to the air, sterile and without change of temperature. In providing artificial food for infants the nearer we keep to nature's method, the nearer we are to being right. Cow's milk is at its best when drawn from the cow. Bacteria do not grow readily in it for six hours after it is drawn, showing it has some inherent germicidal power up to that time. After milk is six hours old bacteria grow in it with hourly increasing ratio at room temperature. If milk be kept at a temperature of 40 degrees Fahrenheit, bacteria grow much more slowly. It follows that cow's milk when drawn should be promptly cooled down

and kept cool. It should then be delivered to the consumer in the quickest possible time.

The present situation opens an excellent opportunity for the department of health to use their full power in educating the public upon every phase of the milk problem and to keep at it persistently.

TUBERCULAR CATTLE.

For reasons of economy as well as a means of defense against sickness, all traffic in tuberculous cattle should be prohibited in the state of Illinois. Every bovine creature in the state should be promptly tested for tuberculosis, and all found diseased should be promptly destroyed. The state can well afford to pay a fixed price for every animal so destroyed. Retests should be made of those cattle exempted, at such future intervals as experience has taught to be wise. Every calf born should be tested at the proper age. If this were done, there would be no tubercular cows in the state in two years time. Tuberculosis in cattle can be eradicated. Then why not eradicate it?

BUTTERMILK.

Since Metchnikoff lent the great weight of his scientific opinion in favor of buttermilk as a healthful beverage, it can be found of good quality in practically every hotel, restaurant, and lunch counter in Chicago. Buttermilk is now the sole luncheon drink of thousands of men. It is a better drink than sweet milk, for sweet milk cannot well be digested by many and is repugnant to others.

NURSING INFANTS.

Dr. Abraham Jacobi of New York, president of the American Medical Association, said in his address at the Atlantic City meeting this year that "There is rarely a woman who cannot nurse her infant," and he said the truth. While the question of a better cow's milk supply is up and being discussed, it is in order to point out that a larger and better supply of mother's milk is needed and is attainable. Mothers with scanty supply or some breast soreness are too much inclined to give up nursing their babies, and doctors are too ready in giving their consent. Persistent attention to the mother's nursing ability should be given in every instance during the nursing period and before the child is born. There is no proper substitute for mother's milk and the mother or the physician who too easily yields

to the cow's milk substitute is robbing the child of its rightful healthful inheritance, and possibly is robbing the child of its life.

MILK TRANSPORTATION.

Steam railroads as a means of transporting milk quickly and safely have apparently done their best, but they are too unwieldy and the operations of trains too expensive to do the work in an up-to-date manner. As a rule cows are milked at four o'clock in the morning and again at four o'clock in the evening. These two milkings are brought to the city by train once a day, and the trains have all arrived about noon. This milk is then held by the dealers until the following morning before it is delivered to the consumer. Consequently, the morning milking is twenty-seven hours old at seven o'clock breakfast, and the night milking is thirty-nine hours old at breakfast time. Before the next supply is delivered one half is fifty-one hours old and the other half is sixty-three hours old. Even when produced from healthy cows and in the most cleanly manner and kept constantly chilled, this old milk is so far removed from the natural food for infants that it is probable an earnest effort to find a better substitute for mother's milk by those responsible would result advantageously to the infants.

Two things could be done, and easily done, to hasten the transportation of milk. One is to have an afternoon delivery of milk in the city instead of a morning delivery. This would bring the milk to the consumer twelve hours earlier, and the milkmen would have day work instead of night work as at present. Electric cars now carry passengers from the dairy district to Chicago in an hour or two hours' time. These cars could be loaded with milk in the country by six o'clock in the morning and six o'clock in the evening. From nearby points it could reach the city by seven o'clock when the milk would be only three hours old. Furthermore, these electric cars could be switched over the tracks of the city's electric railways and be placed in every corner of the city quickly. It will be worth the milk committee's while to take cognizance of the transportation feature of the cow's milk problem.

A MODEL DAIRY.

A recent visit to the Wakefield Farms of Mr. George E. Van Hagen, at Barrington, Ill., reveals that beautiful estate as a model dairy. It is one of the dairies recommended by the Chicago Medical Society Milk Commission and one of the "show" places of the country.

Mr. Van Hagen's dairy cows are all pure-bred Holstein-Friesian stock. It is claimed for this breed that they are hardier and more immune to disease than other cattle, and that the milk is more digestible because the fat globules are smaller than in the milk from other breeds. All the herd are tuberculin tested and given the most scrupulous care. Every detail of cleanliness is observed in the milking and the handling of the milk afterward. The milk is promptly cooled and kept iced until it is delivered to the consumer in Chicago. So much is said about dangerous milk that it is a pleasure to know the pure, safe, and nutritious article is being produced and marketed in increasing quantity.

Book Reviews

ARTERIOSCLEROSIS. Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment. With a Special Chapter on Blood Pressure. By Louis M. Warfield, A. B., M. D., Assistant Superintendent and Resident Physician to Milwaukee County Hospital; Assistant Professor of Medicine, Wisconsin College of Physicians and Surgeons, Milwaukee, Wis.; formerly Medical House Officer, Johns Hopkins Hospital, Baltimore, Md.; Member American Medical Association. With an Introduction by W. S. Thayer, M. D., Professor of Clinical Medicine, Johns Hopkins University. Illustrated with Twenty-eight Engravings. St. Louis: C. V. Mosby Company, 1912. Price, \$2.50.

There is no one subject of greater importance to the medical profession in its work of combating disease than the study of arteriosclerosis, and it is equally true that it is of even greater importance in its relation to the study of preventive medicine and longevity. A thorough knowledge of the causes, the pathology of this condition will lead to a knowledge of the means necessary to its prevention. That a great deal of hope cannot be held out as to treatment and cure when once the condition exists must be acknowledged.

Facing these facts we must welcome as most valuable and opportune such a monograph as Dr. Warfield has given us. This, the second edition, has been so rewritten and added to that it is practically a new book. He has gone over the whole subject in a most thorough manner, the sections upon the physiology, pathology, etiology and prophylaxis being especially valuable. He has recognized the intimate relationship with blood pressure and has devoted special attention to it—this

chapter will be of interest because of the clear and graphic manner in which he presents technic and emphasizes the necessity of estimating both systolic and diastolic pressures. The chapters upon symptoms, physical signs, and differential diagnosis place the reader in command of all knowledge necessary to insure recognition of the trouble in any of its manifold phases.

The book is rendered more serviceable by a chapter upon the relation of arteriosclerosis to life insurance, while its great prevalence and the necessity for study that will lead to its prevention, as far as possible, has been presented most ably in an introduction by Professor W. S. Thayer, of Johns Hopkins.

AN ESSAY ON HASHEESH. Including Observations and Experiments. By Victor Robinson, Contributing Editor, Medical Review of Reviews; Pharmaceutical Chemist, Columbia University; Member of American Chemical Society; Author of "Pathfinders in Medicine." New York: Medical Review of Reviews, Two Hundred and Six Broadway, 1912. Price 50 cents, postpaid.

This is one of the most delightful little books we have read in some time. Its opening is a full historical account of hasheesh from the time of Homer when it is "ushered into history held in the beautiful hands of Helen of Troy" down to our own day. Its chemistry, physiological effects, and the therapeutic action are all entered into, but the most interesting part of the book is the carefully recorded account of the results of the experimental administration upon the author and several of his friends. This account gives one a very clear idea of why hasheesh is so universally used in the East, at least as the great assuager of grief or trouble. We can understand why the "hasheesh eater" says: "At the vestibule I could have sat and drunk in ecstasy forever, but lo I am yet more blessed. On silent hinges the door swings open and I pass in."

To those who want to know all about hashcesh, or to those who would have a most pleasantly spent hour, we can recommend this beautifully written brochure.

TRAITE INTERNATIONAL DE PSYCHOLOGIE PATHOLOGIQUE. Editor: Dr. A. Marie de Villejuif. Committee of Publication: Professors Bagenoff, of Moscow; Bechterew, of St. Petersburg; Clouston, of Edinburgh; Dejerine, of Paris; Grasset, of Montpellier; Lugara, of Modena; Magnan, of Paris; Pilcz, of Vienna; Ziehen, of Berlin. The third and last volume, Psychopathologie appliquee, a

very large octavo of 1,086 pages with 338 illustrations in the text. Published by Felix Alcan, 108 Boulevard Saint-Germain, Paris.

This, the third volume, completes an international encyclopedic work on pathological psychology. The scope of the treatise can scarcely be gathered from its title. For instance, everything pertaining to the historical side of the subject of psychopathology, the role of the psychoses in history or their influence on races, comparative psychopathology and collective psychoses, all are treated exhaustively and adequately in this last volume.

The present volume furnishes an article on morbid mentality from the psychophysiological standpoint by Bianchi and Sikorski that is unique in many respects. The question of sexual psychopathology is presented by Havelock Ellis in one of the best epitomes that has ever appeared in print. The subject of animal psychopathology furnishes an opportunity for the presentation of much extremely interesting and novel material. The relation of social and cosmic factors in the etiology of psychopathic disorders is entered into at length, and the volume ends by laboratory studies and examinations in psychopathic disorders.

WHAT TO DO IN CASES OF POISONING. By William Murrell, M. D., F. R. C. P. Senior Physician to the Westminster Hospital, Lecturer on Clinical Medicine and Joint Lecturer on the Principles and Practice of Medicine; Late Examiner in the Universities of Edinburgh, Glasgow, and Aberdeen and to the Royal College of Physicians of London. Eleventh Edition. New York: Paul B. Hoeber. 1912. Price, \$1.00.

A very convenient little volume, giving the poisons, antidotes and general treatment, etc. This is the eleventh edition, thoroughly revised and up to date. The author speaks of the "deadly" veronal which some of our friends should remember who prescribe it all too freely. After defining poisons and their classification, the author proceeds to the diagnosis, dividing the general symptoms in subdivisions such as patient collapsed, patient cyanosed, tetanised, paralysed, etc. He has a good chapter on the constituents of popular patent preparations which often cause poisoning. After various chapters on antidotes, stomach pump, emetics, legal aspects of cases of poisoning, including an interesting chapter on fees in poisoning cases, the author takes up each separate drug, symptoms, diagnosis and treatment. It is a very handy volume to have in one's library.

LANDMARKS AND SURFACE MARKINGS OF THE HUMAN BODY. By L. Bathe Rawling, M. B., B. C. (Cant.), F. R. C. S. (Eng.) Surgeon with Charge of Out-Patients, Demonstrator of Practical and Operative Surgery, Late Senior Demonstrator of Anatomy at St. Bartholomew's Hospital; Late Assistant-Surgeon to the German Hospital, Dalston; Late Hunterian Professor, Royal College of Surgeons, England; etc. With Thirty-One Illustrations. Fifth Edition. New York: Paul B. Hoeber, 69 East 59th Street. 1912. Price, \$2.00.

The fifth edition of this valuable book will be welcomed by students as well as physicians. The last edition was exhausted in one year, so little change has been made in the present volume. These surface markings are so splendidly worked out and well illustrated that it gives one a new interest in the subject, and we congratulate the author on the well-deserved success of his book. The appendix contains in most convenient shape, much valuable information, such as length of various passages, tables, weights of organs, etc.

PELLAGRA. History, Distribution, Diagnosis, Prognosis, Treatment, Etiology. By Stewart R. Roberts, S. M., M. D., Associate Professor of the Principles and Practice of Medicine, Atlanta College of Physicians and Surgeons, Atlanta, Georgia; Physician to the Wesley Memorial Hospital; Formerly Professor Biology in Emory College. With Eighty-nine Special Engravings and Colored Frontispiece. St. Louis: C. V. Mosby Company. 1912. Price, \$2.50.

This is a very interesting and most timely book on the subject of pellagra. The author, who has given the matter the most careful and thorough investigation, has added greatly to our knowledge on this subject. After dealing with general considerations, history, geographical distribution and classification, the author describes the alimentary tract, the skin and nervous system in pellagra, as well as other systems and changes; then the diagnosis, prognosis and treatment; with the concluding chapter on the causes.

The author is inclined to the belief that it is an infectious disease, although he gives other theories a fair and frank discussion. The author thinks that we have about ten thousand cases of this disease in the United States, and as American medicine has given to the human race serum for meningitis and has discovered the insect cause of yellow fever, he endorses the hope that as pellagra has appeared in America no doubt in America the true cause of the disease will be discovered.

News Items

Removal Notice.—The Hoffman-LaRoche Chemical Works, New York City, announce their removal to 440 Washington street, corner Desbrosses.

Wanted.—Young medical student or doctor to correspond with us about a new way of money and friends making in the health and efficiency promoting line. Address Geo. A. Schmidt (IT) Co., 236-238 North avenue, Chicago. Established 1875.

For Rent.—A fully equipped office in a desirable suite. This includes phone, attendant, etc. Everything ready to step in and begin work. I have associated myself with another physician and leave my office completely furnished. H. L. Pollock, M. D., Suite 1124, Republic Building. Rent very reasonable.

Dr. Frank H. Blackmarr desires to announce his return to office and hospital practice of Electro-Therapeutics—X-ray Therapy, Radium Therapy, X-ray Laboratory for rapid work. Office hours: 935 Marshall-Field Building, 8:30 a. m. to 9:30 a. m., telephone Private Exchange 1; 551 E. 47th street, 11 a. m. to 3 p. m., telephone Oakland 1719.

American Hospital Association.—The 14th annual meeting of the American Hospital Association will be held in the Hotel Ponchartrain, Detroit, Mich., on September 24, 25, 26, 27, 1912. The preliminary program promises many interesting papers on hospital organization, economics, nursing, infectious diseases, convalescents, out-patients, social service and other allied subjects. Further information may be obtained from J. N. E. Brown, M. B., secretary of the association, 90 Charles street, East, Toronto, Canada.

Ban on "Baggage Smashing."—Hereafter it will be "the gentle art of the baggage custodian" rather than "the rough tactics of the baggage smasher" along the lines of the Denver and Rio Grande Railroad if the officials of that company carry out present plans.

Every employe throughout the system has been notified that a rule requiring the careful handling of all kinds of baggage is to be rigidly enforced. In addition agents—especially those at small stations—have been directed to exercise particular care in having all baggage, mail and express matter taken into the baggage-room immediately after being deposited on trucks and platforms. By strict attention to this requirement, it is declared, a diminution in the number of complaints concerning the loss of baggage and express and the miscarriage of mail is sure to follow.—From Chicago Record-Herald. 2-18-12.

Laboratory Instruction.—An interesting announcement comes from the Chicago Laboratory that a department has been inaugurated for the instruction of practitioners and students in the technique of diagnostic work. The general course as outlined embraces the general chemical, microscopical and bacteriological examination of the sputum, gastric con-

tents, feces, urine, blood, various exudates and other secretions and excretions. The normal conditions of the various fluids of the body are taught and the pathological and clinical significance of their variations are emphasized.

The time taken to cover this field is four weeks, arranged in three-hour sessions daily. The fees for the general course are \$50, which includes all reagents and supplies. Special courses are offered in such subjects as the Wassermann and other important sero-diagnostic tests, preparation of vaccines, special quantitative chemical methods, toxicological and medico-legal examinations. For the special work the fees vary from \$15 to \$25 per week.

American Association of Clinical Research.—The fourth annual meeting of this body will take place in New York, at the Academy of Medicine, on November 9, 1912. The sessions will be held from 9 a. m. to 1 p. m., from 3 p. m. to 6 p. m., and from 8 p. m. to 10 p. m. The evening session will be open to the public. Notable contributions on the Negri bodies, on certain fluids for tubercle bacilli in the urine, on adjustment and function, on psychoanalysis and *traumbedeutung*, on a pandemic of malignant encapsulated throat coccus, on the single remedy, on indicanuria and glycosuria, on disease conditions expressive of correct diagnosis, on biochemical problems, on the two most far reaching discoveries in medicine, and others are to be given. Every member of the association is cordially invited to contribute a paper. The title should be sent at once to the permanent secretary, so that the programme may be completed. As soon as completed, the programme will be mailed. Members will please make an effort not only to contribute a paper, but to be present at the coming meeting, to bring friends, and to assist in the most important movement of medicine as represented in the aim of this association, the systematic, scientific investigation and advancement of medicine by conclusive clinical and clinically allied methods. Friends should be invited to become members, and their support will be cordially appreciated.

Trial by Rice.—They have peculiar methods of trying suspects in Bengal. One of these is called "trial by rice," says a writer in the Wide World Magazine. After a priest had been consulted as to an auspicious day, every person suspected and those who were usually near the place at night were ordered to be present at 10 o'clock that morning. On that date all turned up. First, the people were made to sit in a semi-circle and a "plate" (a square of plantain leaf) was set before each. Then a priest walked up and down chanting and scattering flowers. These said flowers, by the way, must be picked up by a Brahmin, and they must be those which are facing the sun. This ceremony over, one of the clerks went to each man, and gave him about two ounces of dry raw rice, and told him to chew it to a pulp. Then commenced what looked like a chewing match. After about ten minutes had elapsed they were told to stop and eject it into the plantain leaf. All did so easily, with the exception of three men. In the case of these three the chewed rice had, in two cases, become slightly moistened, but not sufficiently so to allow

of its being easily ejected, and they had much ado to get rid of it. The third man had chewed his into flour and it came out as such, perfectly dry. One of these three men promptly commenced to cry, and begged for mercy, confessing everything, and stating that man number three, who had acted as a kind of flour mill, was the chief instigator. It is a curious fact that fear, arising from an evil conscience, prevents saliva coming to the mouth, with the result described.

A Modernized City Court.—The city court of Indianapolis is setting the pace in the application of the probation principle in dealing with certain classes of offenders. The most interesting features of this work, as described in the annual report of the court for 1911, are the use of the suspended sentence, the system of fine-paying by instalments and the treatment of inebriates. During the year 1911 sentence was suspended in 338 cases of first offenders, and judgment was withheld in 1768 cases, the offender being placed upon probation in each case. Opportunity to pay fines by instalments was given to 1,140 persons during the year. Most of these persons were without friends who could pay the fine, and consequently would have been imprisoned if the instalment plan had not been adopted. The amount of the fines paid by instalments during the year was \$9,613.25. Of the 1,140 persons who were allowed this opportunity, 808 had paid up their fines at the close of the year, and 163 were still paying.

This method of collecting penalties has resulted in a reduction of the number of commitments, thus effecting a saving in the maintenance expense of jail and workhouse, as well as an increase of revenue through the receipts from fines. Aside from its financial success, the new plan has justified itself through its beneficial effect upon the individual offenders. Only ten of the large number of persons to whom this opportunity was given were returned to court during the year, and in each case the circumstances were of such a character that the court felt justified in giving the delinquent another chance.

The discriminating methods of treating inebriates adopted by the court proved equally successful. Of 2,137 persons charged with drunkenness during the year 226 were allowed to pay their fines by instalment. In 76 cases the defendant was required to take the pledge, and of this number all kept the pledge faithfully but six. In all cases of first offense for drunkenness, judgment was withheld. The court used all possible discretion in ordering commitment to jail or workhouse for this offense. The effort was made to apply measures that would prove remedial or reformatory instead of penalizing all offenders indiscriminately.

Another interesting experiment with the probation system was the requirement that persons charged with offenses involving loss or damage to property and personal injury should make complete restitution to the injured party before the final disposition of the case. During the year \$1,758.87 was recovered and paid over to persons who had suffered damage through criminal acts. The record of this court demonstrates the economy and utility of tempering the administration of justice with sanity.

Facetiae Medicorum

THE FADDIST.

There was an old woman,
And what do you think?
She grew fat and healthy
On victuals and drink.
But now her digestion
Is all in a riot,
Because she got cranky
And tackled a diet.

—May Lippincott's.

HIS ADVANTAGE.

"A dermatologist has one advantage over his brethren in the profession."

"How so?"

"He can lawfully conduct a skin game."

VICARIOUS SACRIFICE.

Hokus—Toothache, eh? I'd have the blamed thing pulled if it were mine. Pokus—So would I if it were yours.—Puck.

WHY THEY WENT.

As the Sunday-School teacher entered her class-room, she saw leaving in great haste a little girl and still smaller brother.

"Why, Mary, you arn't going away?" she exclaimed in surprise.

"Pleathe, Mith Anne, we've got to go," was the distressed reply.

"Jimmy'th thwallowed hith collection."—August Lippincott's.

A PROPER DIAGNOSIS.

Patient—"Doctor, I can't sleep at night. I tumble and toss until morning."

Doctor—"H'm, that's bad. Let me see your tongue. (After diagnosis.) Physically you are all right. Perhaps you worry over that bill you've owed me for the past two years."

NOT COMPLIMENTARY.

Pat, thinking to enliven the party, stated, with watch in hand, "I'll presint a box of candy to the loidy that makes the homliest face within the next three minutes."

The time expired, Pat announced: "Ah, Mrs. McGuire, you get the prize."

"But," protested Mrs. McGuire, "go way wid ye! I wasn't playin' at all."

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Original Articles.

THE MARINE HOSPITALS OF FRANCE; A VISIT TO BERCK.

By J. W. PETTIT, M. D.

Medical Director, Ottawa Tuberculosis Colony.

The maritime hospitals of France for the treatment of surgical tuberculosis, while not unique, are the best developed, and in age and extent easily rank among the most important charities of the world. The hospital administration of Paris, as early as 1842, endeavored to improve the condition of scrofulous children in the infant hospitals. In that year a certain number of children were sent to take the waters at Forges, which has some repute in the treatment of scrofula. The results were not encouraging, and the experiment was not repeated for 10 years.

Attention was first attracted to the open air by the sea in the treatment of this class of cases in 1845. In that year M. Lhoste, of St. Malo, requested that 20 children be sent him for treatment. These were returned at the end of three months cured. The favorable results led to a second attempt in 1847. For some reason the plan was not pursued, and attention was again directed to the mineral baths of Forges. Scrofulous patients were sent there in 1852—3, and a small hospital of 100 beds was founded, a part of which was reserved for convalescents, and the remainder, 40 beds, for the treatment of scrofula.

In 1857 M. Perrochaud, of the children's hospital, recalling the experience at St. Malo, took measures to reinstate the marine treatment for scrofula. Most of the children were sent to be cared for by the Widow Duhamel, residing at Grosfliers, not far from the sea. She took her small charges to the beach twice a day, bathed them and their

sores in salt water and applied a light bandage to the open wounds. This nurse, already old, did not continue long in the service. A few children were placed with the Widow Brillard, commonly called Marianne. It seemed natural to place the children in her charge, as she was of a kindly disposition, and often cared for the children of the fisher-folk when the mothers hunted crabs on the beach. From these small beginnings the splendid marine hospitals for tuberculosis were developed.

By 1857 the results of treatment had been so favorable that Dr. Perrochaud and Inspector Frere addressed a communication on this subject to the director of public charities. The records of the early cases were not accurately kept. In 1859, 37 children were sent for treatment and 25 returned cured.

It is difficult for the modern pathologist to understand what the good Doctor Perrochaud meant by "scrofula." In a general way it included the modern group of surgical tuberculosis, but much more. Having no knowledge of the specific nature of tuberculosis, it is evident that scrofula would include many non-tuberculous disorders. The statement is made that in 1860-61, 72 children were sent, of whom 22 were rachitic, 29 scrofulous and 21 anemic, of the whole number 55 were improved. In that year five Franciscan sisters were sent from Calais to assist the Widow Brillard, whose house had been enlarged to accommodate the growing numbers. It was not long before it was recognized that the provision was insufficient and a small hospital was begun in March, 1861, and occupied the following July. The hospital had two wings with a central administrative building; it was built parallel with the beach, each building having accommodation for 50 children, one for girls and the other for boys. This small hospital served for eight years, during which time it was under the charge of Dr. Perrochaud, who had abundant experience with marine hydrotherapy and the curative effects of an open air life. The physicians of Paris became interested in the experiment, and in 1866 Dr. Bergeron made an elaborate report on the results obtained in the treatment of scrofulous children at Berck. A contract was entered into with the Franciscan sisters to care for the children while the medical service was to be under the care of Dr. Perrochaud. Article V of this contract excluded scrofulous infants who had chest troubles and who could not walk, also if they had any contagious disorder, ring-worm or ophthalmia. All children must be more than five years old. In 1861-1865, 380 scrofulous and rachitic children were sent to Berck, from the two children's hospitals of Paris. Their average stay was nine

months. Dr. Bergeron, in his report, says that 234 were cured, 93 improved, 18 died and in 35 the results were negative. He said: "While the hospital at Berck seemed to be placed by accident, the situation could not have been improved for a long distance on the coast. It is protected from north winds; it is bathed in the Rennel

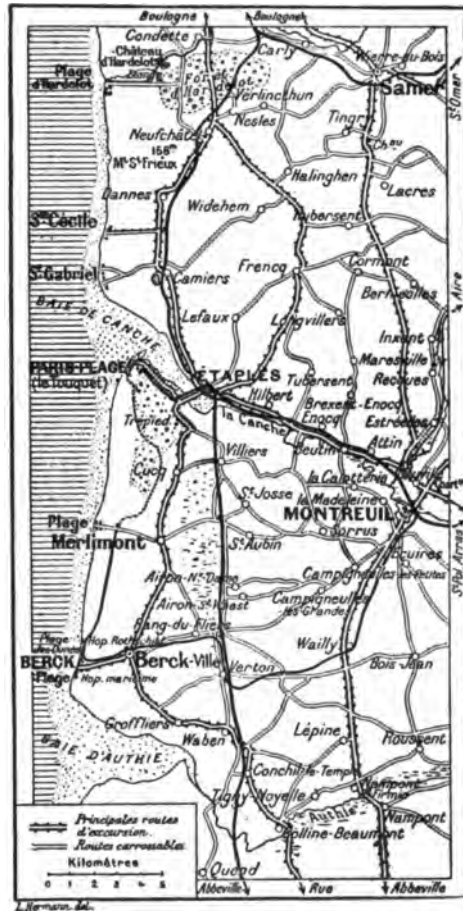


Fig. 1. The location of Berck.

current of the Gulf stream and is never very hot nor cold. This enables the children to pass the greater portion of the winter in the open air on the beach, a matter of great importance when the prolonged duration of scrofula is considered."

It is of some interest to study the table of admissions, with the diagnosis, of 527 cases admitted during the year 1861-1868. It is

probable that the term "generalized scrofula" included the rachitic, though it would appear that at an earlier period Dr. Perrochaud recognized rickets as an entity, but probably regarded it as a manifestation of scrofula. There were 158 cases of generalized scrofula, of whom 146 cases recovered. The remaining 368 cases included enlarged glands, coxalgia, white tumors, multiple caries, ophthalmia, osteitis, periostitis, necrosis with fistula, vertebral caries with abscess, cold abscess and tuberculosis of the testicle. This latter group is certainly largely tuberculous and would be so classed in modern tables. In this group 16 died and 19 were not improved. This is a record of which our best surgical hospitals might be proud and that before the days of specific tuberculous treatment, and indeed before the cause of many forms of "scrofula" was known.

In 1867 it was proposed to extend the establishment to proportions commensurate with the service it was destined to render. At this time there had been little advance in knowledge of the nutritional disorders of infancy. All the cases sent to Berck were still scrofulous. In that year M. Husson, director of charities, proposed the construction of a new hospital to contain 700 beds. As he pointed out, this would afford great relief to the overcrowded children's hospitals of Paris, and would improve the surroundings of a class of patients who needed the open air of the coast. With a large hospital there arose a discussion as to how it should be built; a long facade parallel with the beach would exclude the salt air in which the curative power was supposed to reside. Finally it was determined to adopt two wings opening toward the sea; between these should be placed the administrative buildings, isolation hospital, etc. The first hospital was established only three metres above high tide, and this was found insufficient. A high elevation exposed the hospital too much to the wind. Finally, five metres was adopted, with a retaining wall to protect it from the ocean. The wards contained thirty-six beds and numbered fourteen. A bath was established to continue the sea bathing during the winter, the water being warmed to a pleasant temperature. A gymnasium and other means of treatment were installed.

Berck has easily been the leading marine hospital of France and for that matter, the first and best in the world. It has cost over 3,000,000 francs and is a monument to those who conceived and built it. One's thoughts naturally turn to the two widows who first carried out the treatment, particularly the one who was called Marianne, who notwithstanding her lonely life, did not become morose (*sauvage*) but

loved the children, and like the first, was a devoted mother to her small establishment.

In 1892 the management of the hospital was placed under a staff of laymen, possibly on account of the increase of contagious diseases. As early as 1879 there were fifty-four cases of ring-worm. These gradually increased until Dr. Quinquod segregated the cases and confined them to six wards, with separate lavatories, laundry, kitchen, etc. The cases of ring-worm at that time numbered 212. In 1894 the hospital was evacuated and thoroughly disinfected. This was followed by the construction of a hospital for infectious diseases.

In 1886 the enlarged hospital at Berck was again overcrowded and the Paris faculty grappled earnestly with the problem of providing for scrofulous and tuberculous children. A study was made of various places on the coast and of a number of resorts with thermal springs. The results at Berck finally determined that there should be a further enlargement of that institution by the addition of three hundred and sixty-six beds and the establishment at Hendaye, in the lower Pyrenees on the coast, of an institution that should combine the marine treatment with a water cure.

As the years passed there was a gradual change in the character of the patients at Berck. At first the admissions were confined to ambulants and convalescents. Later the severe bed-ridden cases, *de grand malades*, were sent in increasing numbers and they remained for months, and sometimes years, perhaps without having seen the ocean. These cases in 1895 numbered one-third of the resident population, and for them the sea-baths and the "iodo saline" emanations of the sea had, as a means of treatment, become of second importance. To restore the climatic advantages to this class it became necessary to construct a special pavilion for the bed-ridden. In the mean time the demand for a surgical service had become imperative and was finally established. In 1905-10 various additions were made.

The prolonged stay of some cases was often discussed. Some patients remained for eight years. It was decided that this should be changed and the maximum should be one year. For many years children were only sent from Paris in the summer months, but later they were regularly dispatched during the winter. The control of infectious diseases made it necessary to keep each child in the isolation hospital for at least fifteen days; this was later extended to one month.

Dr. Perrochaud had full charge of the medical service from 1869. Three years later he had the occasional assistance of Dr. Cazin, who performed operations. In 1879 the latter assumed full charge of both

the medical and surgical service, He gave a complete analysis of 4,692 treated at Berck from 1869 to 1882, the year of the discovery of the tubercle bacillus. It is noted that the term "generalized scrofula" is not included in this table and the diagnoses resemble more closely modern views as to the unity of these disorders. It is true that he has a division of "multiple manifestations" but as this includes only about 5 per cent of the total admissions it does not alter the general results of treatment in what we now classify as surgical tuberculosis. It is curious that neither in this table nor the earlier one is rickets mentioned, while in the report of Dr. Menard, the present chief surgeon for the years 1907 and 1909, nearly one-fifth of the admissions are classed as rickets. The table is certainly instructive as indicating the



Fig. 3. Elevation showing a redressed facade to provide for the open air galleries.

results of treatment before the recognition of the tubercle bacillus. It shows that the modern experience of the importance of a mixed infection was borne out by the earlier studies. It was noted that in Pott's disease and coxalgia the fatal outcome is frequently determined by a mixed infection.

The hospital at Berck now has 1,100 beds, and the latest structures give the open air treatment in covered galleries, parallel with the wards, and facing the sea. Here at all seasons the patients lie on the open verandas. Only at night and during rain and storms are they brought into the wards. The rule is to have them on the verandas

from 6 a. m. to 5 p. m. This is easily accomplished by having the beds on rollers. At night the windows are opened to permit the freest possible circulation of air in the wards. In this way nearly the same advantages are obtained for the hospital cases as are secured by those who can afford a wagon for transportation on the beach.

Abscesses, fistulas and ulcers are exposed to the air during the day, either in the wards or on the galleries, according to the weather. At night a light dressing is applied. It has been found that this exposure to light and air is one of the best means of treatment, ulcers and fistulas rapidly granulate and soon heal. Absence of odor is especially noticeable in wounds treated in this way. The good results



Fig. 4. A closer view showing the patients and nurses on the open galleries.

are not confined to superficial lesions, but extend to deep suppurations about the knee, spine and hip. This treatment is said to have greatly decreased the necessity of operative interference. Operative wounds that do not heal by first intention are on the fifth day exposed to the light and air. In these cases there is a notable absence of redness and edoema, and lessened suppuration, with a marked shortening of the period of repair. Most of the patients with or without suppuration show a marked improvement in general nutrition, the cheeks redden and they become hale and hearty.

It is to be remembered that these institutions belong to and are supported by the City of Paris, and are under the direction of the

Board of Charities of that city. They comprehend the hospitals at Forges, a water cure; Hendaye, a combined water cure and marine hospital, and Berck, a marine hospital. The two former are small institutions, while the latter contains 1,100 beds. Of the latter, three hundred are for bed cases, and the remainder for ambulatory patients. Four-fifths of the beds at Berck are for surgical and one-fifth for medical cases. At Hendaye one-fifth of the beds are for surgical and four-fifths for medical cases. Forges receives only medical cases. The maximum stay of any case at Berck is one year; at Hendaye and Forges it is six months. The admission of children is determined by a commission composed of two representatives of the Paris hospitals,

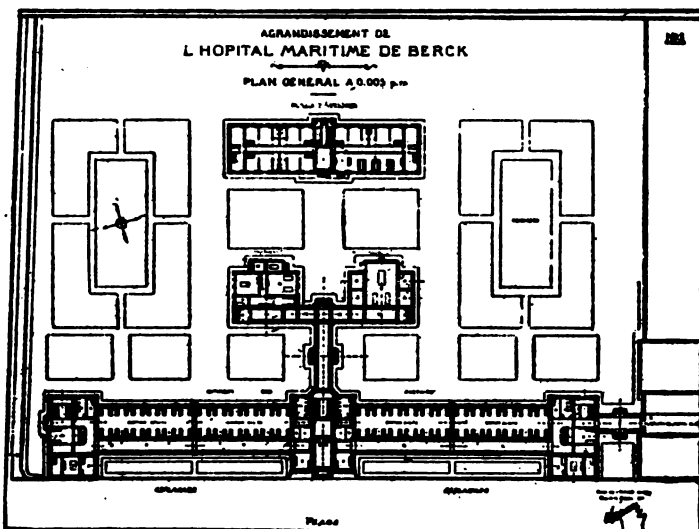


Fig. 2. Ground plan of one of the latest structures, showing open galleries facing the sea.

two from the Paris medical council, and the chief surgeon at Berck, or one of his assistants. Each month the hospitals for children in Paris are informed of the number of beds that will be available in each service. The physicians of the hospitals name the patients, who then are examined by the commission and the circumstances of the parents investigated. When the child has been selected the parents are informed when the child is to be brought to the hospital, to begin the journey. A special car is provided, containing six nurses and one interne. As the admissions at Berck number about 80 per month it is necessary for the car to make two trips. The return of the hos-

pital car is utilized for sending convalescent and discharged cases to their homes. The hospitals which have sent cases have one week's notice of the return of the patients.

Each little patient is kept under observation for at least one month in the isolation department. In suspicious cases this is extended to a second month before they are entered on the regular service. That this is no idle precaution is shown by the following table of contagious cases in two years:



Fig. 5. The isolation hospital in the foreground.

	1909	1910
Measles	90	62
Whooping cough	5	63
Ring-worm	10	0
Scarlet fever	20	13
Diphtheria	1	44
Mumps	3	0
Erysipelas	5	7
Chickenpox	21	0
Total	155	189

After leaving the isolation department, the children are divided into three groups; bed cases, semi-ambulant and ambulant. The bed cases are treated on the wards with open verandas facing the sea, and include the cases of Pott's disease, tuberculosis of the peritoneum and of the joints of the lower extremities. These are further grouped in the wards according as they are (a) recent, (b) have closed abscesses

and (c) open abscesses, and operative cases. None of the children, while in the wards with open verandas, are taken to the beach. The semi-ambulant cases exercise in the open air two or three hours daily, and have their exercises carefully regulated; they are exposed to the light and air a part of each day. The ambulant cases include those with enlarged glands, rachitis, tuberculosis of the upper extremity, and the advanced convalescents. These go every morning and afternoon to the beach; in summer they bathe in the open sea and in winter in the artificially warmed tanks.

Orthopedic treatment consists essentially of prolonged fixation by plaster. Abscesses are not opened, but are evacuated by puncture and may or may not be followed by an injection. Operations are never undertaken, except when necessary to save life or preserve the usefulness of an extremity.

The results in 1909 show a high recovery rate and a low mortality.

Admissions:

Pott's disease	63
Hip disease	77
White tumor of knee.....	51
Multiple tuberculous foci.....	36
Arthritis of elbow.....	14
Arthritis of wrist.....	2
Arthritis of ankle.....	6
Spina ventosa	52
Osteitis	59
Tuberculous peritonitis	4
Adenitis	197
Purulent pleurisy	5
Lymphatism	128
Rachitis	206
Syphilis of the bones.....	4

Total 907

There were discharged cured, or on the road to recovery:

Pott's disease	111
Hip disease	102
White tumor of knee.....	70
Multiple tuberculous foci.....	56
Arthritis of elbow.....	17
Arthritis of wrist.....	4
Arthritis of ankle.....	9
Arthritis of shoulder.....	3
Spina ventosa	34
Divers forms of osteitis.....	88
Tuberculous peritonitis	6
Tuberculosis of testicle.....	2
Adenitis	217
Cutaneous tuberculosis	2
Purulent pleurisy	4
Lymphatism	92

Rachitis	194
Bone syphilis	15

Total1,026

The mortality was 23.

Hip disease with fistula.....	4
Pott's disease	3
Multiple tuberculosis	12
Tuberculous meningitis	2
Broncho pneumonia	1
Intestinal obstruction	1

Total23

Berck Plage (beach) has 10,000 inhabitants, 4,000 of whom come from all parts of Europe and are suffering from various forms of surgical tuberculosis. Besides the Maritime Hospital, there are several charitable and private institutions in which the treatment is conducted on the same lines. In some of these, adults are admitted. The results are not quite so favorable in adults as with children. One of the unique features of the treatment, especially in the case of youths and adults, are the peculiarly constructed carriages drawn by little donkeys which permit patients in plaster casts to move about the beach and the streets. The carriage consists of a long narrow basket body mounted on low wheels. It is not unusual to see patients in prone position guiding their donkeys by the aid of mirrors suspended over their heads. It is only necessary for patients to have the arms free to enable them to thus move about.

The history of the treatment of tuberculosis at Berck is exceedingly interesting simply as a story. It also points a moral which is the primary purpose of this article.

Long before the discovery of the tubercle bacillus tuberculosis was being treated successfully, but empirically, at Berck by methods which we now know to be on a scientific basis. The rationale of the treatment was not understood.

The explanation of results has varied at different times. In the early days at Berck the good effects were attributed to the salt air, impregnated with the iodized emanations of the sea. It is true that these were never identified or measured but it was as good an explanation as another. Later, at Leysin in Switzerland, when the same treatment was instituted with equally good results, it was there attributed to mountain air and the peculiar effects of the sun's rays at a comparatively high altitude. This led to a modification of the views at Berck, and the good effects are now attributed to the purity of air, its freedom from dust and its "accentuated power of oxidation"

(Dr. Menard) whatever that may mean. One cannot help asking the question, whether it is not just plain air and sunlight. The composition of the atmosphere is practically the same everywhere, and in these two institutions, one in the Swiss mountains at an elevation of 5,000 feet and the other projecting out into the Atlantic ocean, the

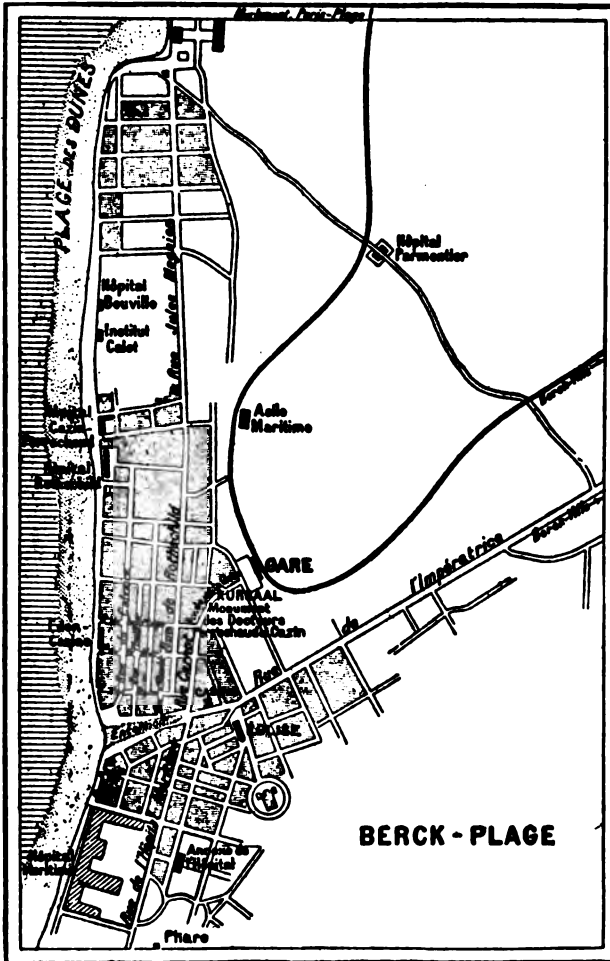


Fig. 6. Berck Beach, what was formerly a barren stretch of sand dunes, is now a village of 10,000 inhabitants containing at least 4,000 cases of surgical tuberculosis. It is still a somewhat dreary and uninviting locality.

results are identical. The question naturally arises, could the same results be achieved in the pine forests of the north, the sand dunes of Lake Michigan, or on the prairies of Illinois? This search for air of

a peculiar quality has lead to enormous expenditure in conquering an inaccessible site in the Swiss mountains, and at Berck in keeping the sea from destroying the hospital. Was it necessary?

In the contest with tuberculosis in this country, attention has been largely focused upon the care and segregation of lung tuberculosis. It is true that closed cases are not a menace to the public health, and in many cases surgery alone will do much for them, but this is no reason for our neglect of this class of cases. In the United States but little provision has been made for the hygienic management of closed or surgical tuberculosis. It is true that our operative technique



Fig. 7. A general view of Berck Beach just before the flight of an aeroplane. The "bed-ridden" patients are very much in evidence.

is of the highest order, and is probably better than that of Europe. Their reliance on sunlight, fresh air and all that improves the nutrition of these patients, has lessened operative procedures and perhaps they have gone too far in neglect of radical surgery.

Notwithstanding the splendid results which they have achieved the critical observer cannot fail to be impressed with the thought that their methods are somewhat traditional and not quite in keeping with the modern advances in surgery. It would seem that a judicious combination of surgery orthopedics and hygienic measures ought to furnish the best results. The experience of France teaches that the large general hospitals in our cities are not the best places to care for surgical tuberculosis. Too often the best planned efforts of the sur-

geon are defeated by the conditions surrounding the after-care. While the medical profession in all countries are practically in accord as to methods of treating pulmonary tuberculosis, there is a radical difference in the treatment of surgical forms in this country and Europe, especially in France, Germany and Switzerland. In this country operative procedures are the rule while in Europe they are the excep-



Fig. 8. The donkey and wagon may be said to be the distinctive feature of Berck Beach.

tion. It is evident that either we operate too much or they operate too little. In justice to the American surgeon it is only fair to state that he recognizes the value of hygienic treatment but cannot command the facilities for its application. For the good of our patients and the credit of American surgery it is high time professional interest was being stimulated to make necessary provision for the better treatment of this much neglected class of sufferers.

THE SURGICAL TREATMENT OF TRACHOMA.*

Concluded.

By CASEY WOOD, M. D., CHICAGO, ILL.

II.

Cauterization of the diseased follicles with the thermo-cautery was employed in ancient times, and often followed by extensive scarring.

With the invention of the *galvano-cautery* it became possible to limit the cauterant action (by the use of fine tips), to small areas. Samelsohn, in 1857, burned out the granulations with a very fine electrode.

H. Korn passes a glowing platinum rod over the conjunctival surface in a manner similar to the application of a copper sulphate crystal.

Reich adopted a similar method and limited the use of the cautery to early cases. The method, if cautiously employed, may be used to eradicate isolated granulations. If the follicles are numerous and generally disseminated, it will be found too tedious, requiring several seances.

The great drawback to galvanocauterism, as ordinarily used, is the likelihood of the subsequent development of excessive scar tissue, leading to gross deformation of the lid. Superficial cauterization fails because it does not reach the deeper lying trachomatous elements.

To overcome these drawbacks, Lindsay Johnson has devised a method of electrolysis after preliminary scarification. His instruments are well depicted in the stereopticon views.

Ombini is said to have been the first to use electrolysis in the treatment of trachoma. The method has some enthusiastic advocates; among them Myers, who everts the lids and applies 4 per cent cocain directly to the point he intends to attack. Extremely sensitive granulations may be further anesthetized by applying the solid drug directly to them. With a current of $1\frac{1}{2}$ to 2 milliamperes, a very delicate platinum electrode is plunged into the granulation, withdrawn and the coagulated material washed away with a saturated solution of boric acid. The seances are repeated until all the granules have been similarly attacked.

Margaret A. Cleaves states that thirty-seven applications of zinc

*Two lectures delivered in the Post Graduate Course of the University of Colorado, Denver, July 26, 1912.

electrolysis ($2\frac{1}{2}$ milliamperes) for two minutes at each sitting, cured a case of neglected trachoma, improvement being noticed in ten days.

The use of the X-ray in the treatment of trachoma was first reported by Mayou. He was led to experiment with radiotherapy in this disease by the following considerations: The efficacy of the treatment by caustics is due partly to the production of a leucocytosis with subsequent cicatrization of the trachomatous nodules, partly to



Fig. 13. Hook for holding and keeping the eyelid everted. (Lindsay Johnson.)

the mechanical removal of the diseased tissues, and the destruction of the specific causative agent. Caustics possess the disadvantages of partially destroying the normal palpebral epithelium, thus increasing the tendency to scar formation. The X-ray is an agent capable of producing a more or less prolonged leucocytosis from the mildest to the intensest grade without (except under ill-regulated exposure) seriously impairing the integrity of normal epithelium. Theoretically, therefore, it should exercise a most favorable effect on trachomatous tissue.

It must be admitted that Mayou's theoretical contentions have been borne out by the results of treatment. The technique is as fol-



Fig. 14. Three-bladed Knife and Electrolysis Points, used by Lindsay Johnson for destroying Trachoma bodies.

lows: The upper lid being everted, the lower is pushed up so as to cover the cornea. (In pannus the cornea is left exposed.) The patient is seated nine inches from the anode of a moderately-soft tube and is given daily sittings for four to six days, followed by a week's rest. Should there be no reaction the sittings are continued twice a week until the appearance of photophobia which indicates beginning re-

action. Shortly after this the trachoma bodies begin to disappear. Sitzings are continued once or twice a week until the diseased masses are no longer visible. A certain amount of injection of the conjunctiva persists for several weeks after cessation of treatment and it is not possible to tell whether all the trachoma granules have disappeared until this hyperemia has subsided. Pannus disappears rapidly and old opacities and corneal scars clear up surprisingly.

The cases best suited for treatment are those of the ordinary chronic type. Acute cases exhibiting diffuse infiltrations with much

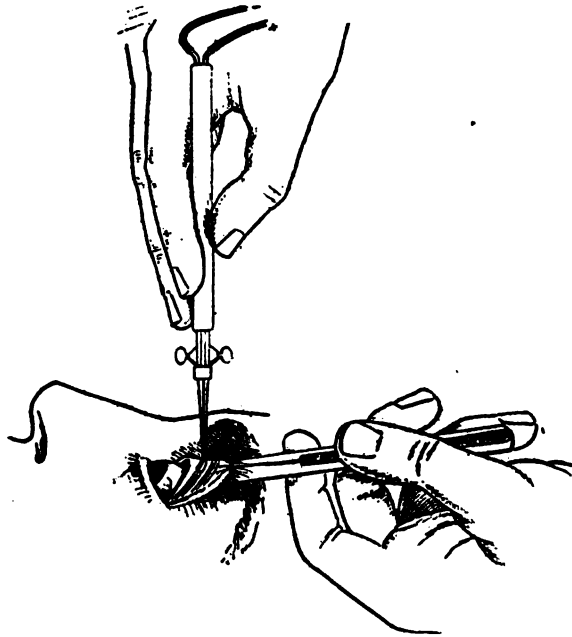


Fig. 15. Electrolysis of Trachoma Follicles by the Lindsay Johnson Method.

photophobia require very careful management and are not so favorably influenced. In the end the conjunctiva is left free of scars and uncontracted. The following advantages are claimed for this procedure: (1) The cure is effected with a minimum deformity of the lid; (2) the treatment is painless; (3) pannus clears with unexampled rapidity.

Comparatively few surgeons have applied *radium* in the treatment of trachoma and their testimony as to its value is inconclusive. Jacoby states that radium has unmistakable therapeutic action. Falta passed

a glass tube containing radium bromide to and fro across the conjunctiva for ten minutes daily. The trachomatous bodies disappeared in from one to two weeks, but the conjunctival infiltration lasted much longer. There appears to be no danger to sight in the method, which is painless and can be used indefinitely at discretion.

Most ophthalmic surgeons will agree that practically all of the surgical procedures just described have the serious drawback that they do not insure against relapses, even when followed by prolonged after-treatment. And the reason for this is not far to seek. The seat of predilection for the trachoma follicles is the upper fornix. Hidden in folds of conjunctiva and deeply recessed, they are difficult to reach by any form of surgical attack. Expression, brossage, scarification, etc., may succeed in ridding the conjunctiva of much of the offending material but, here and there, remain follicles that have escaped. It is these that are responsible for the auto-reinfection.

A realization of the inefficacy of surgical measures which had for their object the eradication of the individual follicle led Benedict, in 1822, to advocate the *excision of the trachoma-bearing upper conjunctival fold*. It appears that this suggestion received little or no support and the practice fell into disuse, until revived by Galezowski in 1874.

The technique of the operation is as follows: The lid having been everted, one blade of Galezowski's double-pointed tooth forceps is passed into the cul-de-sac. The teeth are engaged in a fold of the conjunctiva which is drawn downward and the forceps are closed over it, thus giving control of the operative area. A piece of conjunctiva 3 to 8 mm. wide and as long as the fornix is excised by scissors dissection. No sutures are inserted.

Galekowsky was well satisfied with the results of excision, both immediate and remote, especially as it offered immunity against recurrences. The operation, though correct in principle, was, incomplete, for no account was made of the subjacent tarsus which is usually seriously compromised.

It remained for Heisrath to supplement the Galezowski operation by *excising a strip of tarsus along with the fold of conjunctiva*. This device marked a decided advance in the operative treatment of certain intractable cases of chronic trachoma. Developed by Vossius and Kuhnt it has proved of inestimable service in a class of cases once the despair of victim and surgeon alike. Kuhnt, practicing in Koenigsberg where trachoma is endemic, had ample opportunity to put into application the modifications of Heisrath's procedure sug-

gested by experience, and to determine the indications and limitations thereof.

It was in 1898* that I first reported the results of the Heisrath operation in 14 cases of chronic trachoma. As these cases proved highly successful in my hands, I was encouraged to apply it to other forms of the disease coming under my observation, until now I have operated upon nearly 70 patients.

This procedure is not, in my opinion, indicated in any of the recent or acute forms of trachoma nor would I advise it in any case where there is a reasonable prospect of early cure—not temporary relief merely—from any other form of treatment. When other remedies have failed and there is nothing before the patient but months or years of suffering—nothing but the “ups and downs” that characterize a deep-seated trachoma, with its visual dangers and bodily discomforts from pannus, corneal ulcer, trichiasis and entropion, not to mention long continued and serious interruption of work—in many such cases tarsal excision is certainly indicated. On the other hand, in the most advanced stage of the disease, in those cicatricial forms that have gone on to shrinking of the sac and in which there are probably few or no active trachomatous nodules in the tarsal cartilage, I do not think the operation is justifiable. Nor should it be resorted to if it is possible, as Gifford points out that it sometimes is, to remove, one by one, the discrete and scattered trachoma nodules from the tarsus itself.

Let me further declare myself in this important particular by more positive statements. Removal of the tarsus, in part or as a whole, is indicated in those long standing cases of trachoma, not amenable to other forms of treatment, in which the lids show trachomatous infiltration, with granulation deposits in the connective tissue of the retrotarsal folds, whether the cornea be affected or not. If to these conditions be added thickening and enlargement of the tarsus itself, the operation is even more urgently indicated. Also, when there is evident disease of the folds, without apparent thickening of the cartilage, but the cornea is implicated, the operation should be done. A very important class of cases, from an operative standpoint, is that where with atrophy or cure of previously existing granulations in the tarsal folds there remain deep-seated foci in the tarsus. In this

*The most of the following text consists of extracts from my two papers: Removal of the Tarsus and Retrotarsal folds in certain cases of chronic Trachoma, *Annals of Ophthalmology*, 1898, p. 372, and Exsection of the So-called Tarsal Cartilage in Cases of Chronic Trachoma, *American Journal of Ophthalmology*, July, 1903.

troublesome and inveterate form of trachoma, whether the cornea has escaped or not, removal of the tarsus will give gratifying results.

The palpebral conjunctiva is rarely the only site of granular deposits in long standing cases of the disease. It is quite exceptional that the tarsus and submucous connective tissue escape. I believe that I am correct, therefore, in asserting that the simple method of excising the retrotarsal folds (long ago advocated by Richet and Galezowski) does not meet the requirements in such cases. The proposition is practically to remove the neoplasms that, in the later stages of this infection, are responsible for the destructive lesions of the disease. Why, then, should we remove a portion of these semi-malignant tumors and allow the others to remain? As long as there is reasonable ground for assuming that the activity of the trachoma colonies is confined to the conjunctiva and submucosa such procedures as *grattage*, the use of forceps, cauterization, excision of portions of diseased membrane, etc., are, of course, proper, and the method that I am about to describe is not intended for their relief.

Although it is desirable that the eye should be as quiet as possible before operation, I have not hesitated to excise the tarsus either in the presence of corneal ulcer, increasing pannus or during an acute exacerbation of the chronic disease. I have been satisfied with the results in these instances but have been careful to remove the stitches at as early a date as possible and to keep up constant disinfection of the eye while they are *in situ*.

A better understanding of the effects of the operation is gained by a reference to the muscular supply of the lids. According to Thomas Dwight and others the superior rectus, besides its insertion into the globe sends fibres not only to the top of the fold of conjunctiva, which is thus pulled up and back in harmony with the upward excursion of the eye, but also to the top of the tarsus. Moreover "the levator broadens out into an expansion stretching across the whole orbit from one bony wall to the other, which, by its outer portion separates the greater lachrymal gland from the accessory portion below it. This expansion splits into two layers. The greater portion, consisting of involuntary muscular fibres (Mueller's muscle), is inserted into the upper portion of the tarsus, while certain anterior fibres pass into or through the fibres of the orbicularis to the skin of the lid. Their function is to draw the skin to the fold above the tarsus when the lids are opened. The expansion of the levator passing to the tarsus consists largely of unstriped muscular fibres mingled with elastic tissue. This is connected with other involuntary fibres arranged trans-

versely, the whole constituting what is known as "Mueller's muscle." A somewhat similar arrangement exists in the lower lid, the tendinous expansion of the inferior rectus dividing into three layers, one of which is attached to the tarsus and taking the place of the levator

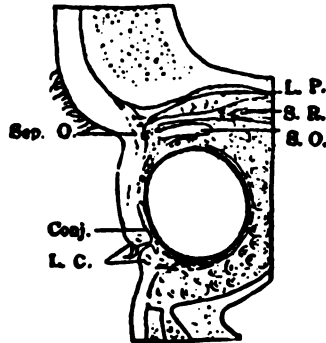


Fig. 16. The Relations of the Orbital Fascia to the Structures of the Upper Lid. (Dwight.)

of the upper lid in drawing the lid down in downward rotations of the globe and in opening the eye.

German authorities consider cocain a sufficient anesthetic for the operation. Kuhnt instills a 4 to 10 per cent solution as a preliminary and then makes two or three subconjunctival injections of a 6 to 10



Fig. 17. Excision of the Tarsus. First Act. Partial Eversion of the Upper Lid with Forceps. (Kuhnt.)

per cent solution. I have not found this very satisfactory with my patients and I now invariably insist upon a general anesthetic. Not only is the operation a painful one (particularly when more than one lid is involved), but its success largely depends upon precision in plac-

ing the sutures and in other details difficult to carry out if the patient be restless or nervous.

The diagrams, from Kuhnt's work, illustrate the various steps of operation, which I shall now proceed to describe.



Fig. 18. Excision of the Tarsus. Second Act. Complete Eversion of the Upper Lid and Exposure of the Retrotarsal Folds. First Incision along the Dotted Lines. (Kuhnt.)

When the operation is done, as it usually is, on the upper lid, the latter is everted so that the convex border of the tarsus is thoroughly exposed. This is now firmly grasped by two strong toothed forceps at the junction of the middle with the outer and inner thirds of the tarsal margin, and drawn firmly upward by the assistant standing at the patient's head. The junction of the palpebral and ocular conjunctivae is now fully exposed and



Fig. 19. Excision of the Tarsus. Sutures in Place. Third Act. Incision along Margin of the Lid.

may be readily examined. Following as nearly as possible the margin of the diseased area, an incision is made from the outer to the inner canthus through the conjunctiva only. Unless, in consequence of previous mechanical treatment, the conjunctiva is bound down to the underlying tissues, the

wound will gape and the fibres of Mueller's muscle may be recognized. Three stitches should now be passed through the bulbar margin of the incision, care being taken to include only the conjunctiva and a few fibres of the submucosa. If more than a mm. in width of conjunctiva is included in the sutures, small symblepharon folds may form opposite each stitch, and if too deeply inserted there will be a noticeable dragging on the lid edges, as occurred in one of my own early attempts.

I have long abandoned the black silk thread I at first employed, for "three-day" colored catgut. These latter stitches hold the conjunctiva in position until the wound heals sufficiently, and when no longer of use are absorbed. Silk, on the other hand, must be cut out, or becomes embedded so that its removal is either difficult or disturbs the wound edges, or its removal being painful, is generally regarded by the patient as an additional operation.

Introduced through the lower wound margin they should be allowed to hang down over the globe (see the diagram) and to rest on a sterilized towel placed on the cheek. After the sutures have been thus placed the

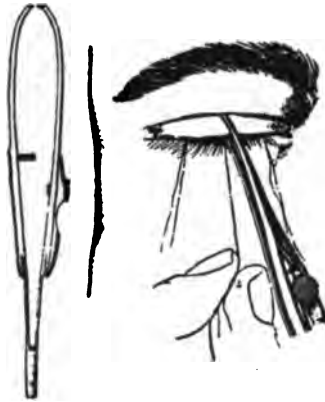


Fig. 20. Excision of the Tarsus. Kuhnt Forceps. Fourth Act. Bringing the Wound Edges together after the Excision and Estimating the Proper Position of the Sutures.

bulbar conjunctiva should be separated from the globe a distance of 3 to 5 mm. from the edge of the wound. The forceps may now be removed from the convex border of the tarsus and the lid margin be grasped at its middle point, a horn spatula being passed behind the everted lid, as shown in the diagram. A second incision, running the whole length of and parallel to the lid edge, is now made as nearly as possible in the healthy conjunctiva. Sometimes this will be three, sometimes even five mm. from the palpebral border, the intention being to remove as little of the unaffected mucous membrane as possible and so to leave as large a portion of the central conjunctiva area as is consistent with the needs of the case. The spatula may now be removed, the assistant drawing the lid upward and backward with one or two fixation forceps. The operator then seizes the tissues at nasal junction of the two incisions and with scalpel and scissors slowly excises conjunctiva and tarsus, carefully avoiding the orbicularis and Mueller's

muscle. At this point the anesthetic may be removed, and time allowed for the bleeding to cease. I have not been much troubled with hemorrhage, although some small branches of the arterial supply may have to be twisted.

The conjunctival sac should be thoroughly irrigated and the lips of the wound brought together. To secure a satisfactory result one must be particular to place each suture in both wound margins so that it will be exactly opposite its fellow when the eye is closed. It is also requisite that the bulbar conjunctiva should not be too much put upon the stretch. The middle suture should first of all be tied with a single knot and it is wise to make certain, by closing the lid, to ascertain whether the precaution just mentioned has been taken before the final knot is tied. I should advise the operator to allow the patient to recover from the anesthetic sufficiently to enable him to determine accurately whether the palpebral movements are sufficient and to be sure that there is no irregularity visible at the lid margins.



Fig. 21. Kuhnt's Method of Enucleating a diseased Tarsus without Sacrifice of a fairly healthy Conjunctiva. First Act.

If the interpalpebral space is the same, both with the eye open and shut as it is on the opposite side, and if the lid margins have a regular outline, all is well and the threads may be cut off close to the knots.

Kuhnt has devised a *sub-conjunctival excision of the tarsus* (the steps of which operation I illustrate with the stereopticon), when the overlying mucosa seems to be free of trachoma bodies, but it is much more difficult of performance than the combined operation, and, although it is theoretically desirable to preserve the overlying conjunctiva, yet, as a rule, better curative results follow its removal.

Balscovich introduces doubly armed sutures upon the inner surface of the lid above the incision, passes them through the thickness of the lid and ties them on the skin surface. I can warmly advise any one of the foregoing methods, having used them all.

Beard has also suggested a number of modifications. He makes the incision in the tarsus slanting upward instead of perpendicular to the plane of that body, thus securing "less unevenness in the result-

ing cicatrix." To avoid contact of the knots of the middle sutures with the cornea, five double-armed sutures are introduced as follows: "One needle passes through the flap of conjunctiva from the epithelial side, then through the remnant of tarsus, coming out at the free border almost in line with the cilia. The other needle is made to pass through the tarsus in a similar manner, but slightly in front and to one side of the track of the first needle. The two ends of thread are tied over a long slender cylinder of gauze. The two outer sutures are knotted in the usual way, i. e., on the conjunctival surface.

Addario removes the upper two-thirds of the tarsal mucosa, and upper third of the tarsus and transplants healthy conjunctiva from



Fig. 22. Subconjunctival Enucleation of a diseased Tarsus. Second Act. (Kuhnt.)

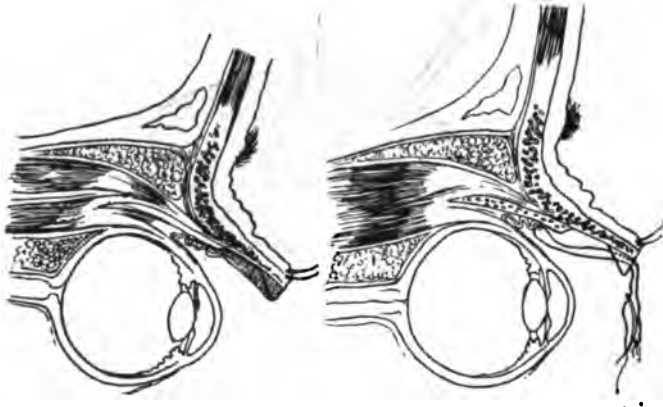
the eyeball to fill the gap. Bitzos excises the diseased part of the tarsus, scarifies the posterior surface and transplants it with the posterior surface turned to the front.

As a rule there is little subsequent pain, and very little reaction. The *after treatment* is simple and need not interfere with the attention properly demanded by the presence of corneal ulcer or other complications. On the whole I find gentle irrigation of the sac four or five times daily with warm boric acid solution, followed by the instillation of warmed and steril vaseline or White's ointment, is grateful to the patient and acts very nicely. The vaseline keeps the sutures soft and serves to protect the cornea. I apply a light bandage over both eyes and order the patient to keep quiet, but do not insist upon his remaining in bed. If silk be used the sutures are removed on the fourth or fifth day. In a week or ten days the wound is usually quite healed but the sac should be subsequently examined for the presence

of granulation tissue or irregular wound margins. These are best clipped off with scissors.

It is advised by some operators that no stitches be used, owing to the possibility of corneal lesions. For my own part I have not witnessed these untoward results when the precautions I have mentioned have been taken, and I am sure that healing occurs sooner and the cosmetic effect is better when sutures are employed.

The most important result of this operation is the relief given to the irritative symptoms of the disease. Very shortly after the removal of the stitches we notice the subsidence of the photophobia, the lachrymation, the foreign body sensations and the local discomfort that accompany chronic granular lids, even when there is no ulceration of the cornea or no acute conjunctivitis present. Pannus is already



Figs. 23 and 24. Modification by Beard of Kuhnt's Combined Excision of the Tarsus and Conjunctiva.

lessened and may even disappear, and as a direct consequence of this the sight is much improved. In one very severe case of corneal infiltration, referred to in my previous communication, where the visual acuity had fallen to 1/10 it rose to 2/7 within three months after the tarsal excision. The asthenopia generally exhibited in the better eye of a case of chronic unilateral trachoma is wonderfully improved, and, strange to say, in not a few cases those common sequels of chronic trachoma, entropion and trichiasis, are decidedly less marked than before the operation. Finally, when we have to deal with recurrent ulcer of the cornea, a cure of the abnormal conditions behind it generally prevents a return of the disease.

The objections that have so far been urged to the removal of the tarsus are:

(1) That *ptosis* is likely to follow the operation owing to section or exsection of the levator palpebral superioris. I have never seen a single instance of this sequel in the twenty-two cases in which I have myself operated on nor in patients under the care of others. Owing to the relief from spasm of the orbicularis palpebrarum (always more or less present in all forms of chronic trachoma) the patient invariably opens his eyes to a greater extent than before, and I have not witnessed and do not expect, as the result of the removal of the tarsus, any diminution in the size of the interpalpebral fissure or in the power of the levator muscle. I believe the reason is that the attachment of the muscle is not to the tarsus alone.

(2) The same denial I would like to enter as to the probability of *entropion*. The fact that a shrinking and diseased tarsal cartilage is one factor in the production of lid edge incurvation accounts for the fact, sufficiently noticed by Kuhnt and seen in several of my own cases, that after the operation the previously incurving cilia gave no further trouble. In one instance, referred to in my first paper on the subject, and in another more recent one where epilation had been practiced for long periods, the eyelashes no longer required to be removed.

(3) *Ulcer of the cornea* has been noted after this operation, and it seems reasonable that the rubbing of the stitches and knots over the eyeball might produce an abrasion followed by infection. I have never had such an experience, and do not think that catgut sutures produce such a result. However, placing the knots in the skin surface of the lids, as described, acts as a further preventive. Moreover, when one remembers that serious corneal ulcer may occur at any moment in these very cases, with or without treatment, it seems hardly proper to lay this accident at the door of the operation.

(4) The one complication to be avoided in Heistrath's procedure is the production of irregular, symblepharon-like folds in the region of the sulci. Unlike the alleged dangers just discussed, which are more imaginary than real, this is an accident which *may* happen to the careless operator. When it does occur it is very annoying to the patient, inasmuch as the ocular excursions are attended by dragging, drawing sensations, and in nervous subjects are exceedingly irritating. For relief of them it is best to dissect back the symblepharal attachments and implant mucous membrane or skin grafts to cover the denuded surface.

As I have intimated, one of the most difficult features of the operation is the *proper placing of the sutures*. To facilitate this step

of the operation Falta inserts each suture in the upper wound margin, as soon as the dissection of the tarsus has reached a point opposite the site of the suture in the lower wound margin, thus getting his sutures in position before the anatomical relations are disturbed. After tying, the stitches are left with long ends and are affixed by adhesive tape to the temples. On the fourth day the stitches are gently pulled out without everting the lids.

To avoid abrasion of the cornea by sutures and to prevent entropion, Cahn passes doubly armed sutures through the lid and ties them on the skin surface. Gronbähn inserts a continuous suture and ties it on the skin over a roll of cotton.

Furnari was the first to advocate removal of a strip of conjunctiva surrounding the cornea as a means of combating *pannus*. A

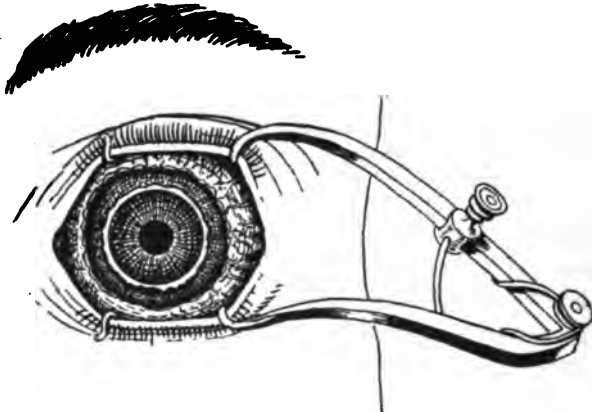


Fig. 25. Peridectomy in Pannus due to Trachoma.

broad ring of circumcorneal conjunctiva extending from the cornea to within 3 mm. of the line where the conjunctiva is reflected from the globe to the inner surface of the lid, is dissected up. The subconjunctival tissue is dissected to expose the sclera and the vessels of the cornea are scarified. Finally, the sclera and ulcerated cornea are touched with a strong solution of silver nitrate. The indications for this operation as given by Furnari are as follows: (1) In membranous or fleshy pannus. (2) In phlebotasias of the conjunctiva or cornea. (3) In simple vascular keratitis. (4) In interlamellar infiltrations of the cornea. (5) In corneal lesions attending entropion, ectropion and trichiasis. (6) In staphyloma of the cornea.

Agnew practiced a similar method, and insisted on a thorough curettage of the episclera surrounding the cornea. The trunks of the corneal vessels were scratched or touched with glowing galvano-cautery

where they crossed the limbus. At the dressings the conjunctiva was loosened and pushed back with a blunt instrument.

The operation of *peridectomy* is thus described by Webster Fox: "The eyelids are held apart by the speculum and several instillations of cocaine made in order to anesthetize the conjunctiva. A fold of conjunctiva near the cornea is grasped by the fixation forceps and divided by scissors. For partial pannus a band of circumcorneal conjunctiva about 5 mm. wide is dissected on the side of the engorged vessel. If the pannus be general a complete circular zone must be cut away, including the subconjunctival tissue to the sclera, in order to form a dike of cicatricial tissue against the convergent vessels. In cases of pronounced pannus a circular incision of the corneal blood vessels by means of a Beer knife is necessary. The appearance shortly after the operation of peridectomy is often alarming, inasmuch as the vessels appear to get a fresh start and the pannus becomes thicker than before. The final outcome, however, is satisfactory. Atropia will have to be used to lessen the photophobia and pain."

Falta cauterizes vascular loops with the galvano-cautery. He declares that curettage of the pannus leads to the formation of dense corneal scars.

Boeckmann advocates the excision of an annulus of conjunctiva followed by vigorous scarification of the subconjunctival and episcleral tissue. The area is then dusted with iodoform. He aims to secure through the formation of granulations, a scar tissue which will protect the cornea from further invasion of vessels.

Another method of operating in pannus has recently been described by William Primrose of Glasgow. The point of a small knife is passed beneath the conjunctiva 2 or 3 mm. from the cornea in such a manner as to puncture subconjunctivally one of the large blood vessels. The knife is then withdrawn. By making the wound small and oblique external hemorrhage is avoided. The extravasated blood pressing upon the vessel walls arrests the subconjunctival bleeding. This mechanical action is increased by the formation of a coagulum, the fibrinous part of which shrinks.

By the time the blood clot has disappeared, the blood vessels in the cornea affected by the operation have shriveled up and the cornea has regained much of its transparency. The whole pannus may be treated in this way at one time, or the operation may be repeated from time to time, only a part of the pannus being treated each time. The latter is always advisable when the pannus is marked, as the inflammatory reaction is sometimes very severe and accompanied by a good deal of pain. Although the structures in the anterior part of the eye ball are all more or less affected by the inflammation, this is easily controlled and subsides in a few days with the application of suitable remedies.

REGULATION OF MARRIAGE.*

By DR. J. N. HURTY,

Indiana State Health Commissioner.

One time a friend writing to me from Switzerland said: "I never saw so many idiots. Cretins, they call them. I saw a pair of them married in the cathedral and the priest blessed their offspring. I am told they are very prolific and that their output of children will be idiotic. The marriage of Cretins should certainly be prohibited by law." That the marriage of those carrying hereditary taint should not be permitted, is the general opinion and the same is sustained by the science of eugenics, yet not a few there are who emphatically say no. Those whose negative arises from religious belief, cannot, of course, be considered, for the question must be settled by cognate facts.

That certain persons should not be permitted parenthood appears in the well known facts concerning the Jukes family, so skillfully worked out by Dr. Dugdale. Still more striking are the facts given by Conklin of—"a young man of good family, after his discharge from the Continental Army, who mated with a feeble minded girl in New Jersey. Later, the young man married a quakeress and founded a family which has since become distinguished in trade and in the learned professions.

"From the feeble minded daughter of the first marriage there were 480 descendants. (A.)

"From the eight normal children of the second marriage there were only 365 descendants. (B.)

STATUS OF DESCENDANTS.

	A	B
Normal	46	362
Feeble minded	143	0
Illegitimate	36	0
Sexually immoral	33	1
Syphilitics	3	0
Criminals	3	0
Epileptic	3	0
Kept house of ill-fame.....	8	0
Insane	1	1
Alcoholic	24	1
Died in infancy	82	15

*Read April 4th, Chicago Medical Society.

This history constitutes a striking proof of the tendency toward the inheritance of feeble mindedness. But, it has been argued that, "the proportion of syphilitics, criminals sexually immoral, epileptics and insane is scarcely greater, in some respects not so great, as might be found among 480 individuals chosen at random, the greater proportion of whom it might be assumed possessed the advantage of having been reared in a better family environment."

Plainly, this argument cannot be accepted, because what is abnormal should be compared with the normal, not with an average from normal and abnormal. Then, again, the statement in comparison with the average is not true. If it were, then the average of defectives in general life would be 45.5 per cent.

But, these considerations, though most important and interesting, are not needed for my purpose as the simple assumption of restricting the procreation of the unfit would be all sufficient.

MARRIAGE REGULATION.

We first recognize that the male human being is a natural polygamist. This may be true also of the female but I let that pass. The point is, marriage is not required for procreation and it is an institution necessitated by social expediency. The law, therefore, rightly regulates it. It is unlawful for persons of a certain age to marry, even with the consent of parents. It is unlawful for brother and sister to marry and in certain states cousins cannot lawfully marry. In other states the law forbids the marriage of whites and blacks. Further, the law empowers only certain persons to perform the ceremony and requires the procurement of a license from a certain official as a prerequisite. Obviously, society could, if considered necessary, impose further restrictions, or indeed any restrictions it wished to, the whole matter being controlled by expediency. The question is not—how far may society go? but—how far shall it go?

EUGENICS LAWS.

Indiana has two eugenics laws. The first, passed in 1905, legalizes sterilization, and has for its prime object the prevention of the procreation of the unfit. This law contemplates but does not impose solely, sterilization by vasectomy. By this method impregnation only is prevented, the power of coitus being unimpaired. It, therefore, does not interfere with marriage nor does it relate thereto, but is referred to because some men who have been sterilized by vasectomy have married with full knowledge by their wives that they could not

be fathers, and now have permanent and happy homes, though childless.

Indiana's other eugenics law was passed in 1905 also and commands that: "No license shall be issued except upon written and verified application. Such application shall contain a statement of the full christian and surname, color, occupation, birthplace, residence, and ages of the parties, whether the marriage contemplated is the first, second, or other marriage, together with the full christian and surnames, residence, color, occupation and birthplace of their parents, including, the maiden name of the mother, together with such other facts as may be necessary to determine whether any legal impediment to the proposed marriage exists.

"Applications for license to marry shall be uniform throughout the state and it is hereby made the duty of the State Board of Health to furnish a form therefor to the several clerks at once upon the approval of this act: Provided, That the State Board of Health may revise said forms so furnished from time to time as may be advisable."

The law further commands:

"No license to marry shall be issued where either of the contracting parties is an imbecile, epileptic, of unsound mind or under guardianship as a person of unsound mind, nor to any male person who is or has been within five years an inmate of any county asylum or home for indigent persons, unless it satisfactorily appears that the cause of such condition has been removed and that such male applicant is able to support a family and likely to so continue, nor shall any license issue when either of the contracting persons is afflicted with a transmissible disease, or at the time of making application is under the influence of an intoxicating liquor or narcotic drug.

"In those cases when the right to a license is not made to appear the clerk shall refuse the issue of same. At once upon such refusal he shall certify the proceedings to the circuit court without formality of expense to the applicants, who shall be notified by him of such action. Such application shall thereupon be at the earliest practicable time heard by the circuit judge without a jury, in court or in chambers during the term or in vacation as the case may be, and his finding that a license ought to issue or ought not to issue shall be final and the clerk shall act in accordance therewith, the true intent of this action being to secure for the applicants a hearing by said judge without affirmative action by said applicants, and to give notice to them of such hearing, its time and place, without delay or expense.

"If persons resident of this state with the intent to evade the provisions of Section 1 and Section 3 go into another state and there have their marriage solemnized with the intention of afterward returning and residing in this state, and do so return and reside in this state, such marriage shall be void, and such parties, upon returning to this state, shall be subjected to all the penalties provided in this act: Provided, This section shall not apply to persons who in good faith become or are citizens of any other state.

"Whoever procures the issuance of a license to marry by any false statement, representation or pretense shall be fined in any sum not exceeding five hundred dollars.

"Whoever being duly authorized to solemnize marriage in this state knowingly joins in marriage persons who have not complied with the statute relative to the procurement of marriage license shall be fined in any sum not less than twenty-five dollars.

"Every clerk of the circuit court who shall issue any license contrary to the provisions of this act shall be fined in any sum not less than twenty-five dollars nor more than one hundred dollars."

As commanded, the State Board of Health prepared the appended blank forms of application for license to marry.

APPLICATION FOR MARRIAGE LICENSE—FEMALE.

Application is hereby made for a license for the marriage of _____ to _____ upon the following statement of fact relative to said parties. 1. The full christian and surname of the woman is _____. 2. Color _____. 3. Where born _____. 4. When born _____. 5. Present residence _____. 6. Present occupation _____. 7. Full christian and surname of father _____. 8. His color _____. 9. His birthplace _____. 10. His occupation _____. 11. His residence _____. 12. Full christian and maiden name of mother _____. 13. Her color _____. 14. Her occupation _____. 15. Her birthplace _____. 16. Her residence _____. 17. Has the female contracting party been an inmate of any county asylum or home for indigent persons within the last five years? _____. 21. If so how and when? _____. 22. Is the female contracting party afflicted with epilepsy, tuberculosis, venereal or any other contagious or transmissible diseases? _____. 23. Is she an imbecile, feeble-minded, idiotic or insane, or is she under guardianship as a person of unsound mind? _____. Signature of applicant _____.

APPLICATION FOR MARRIAGE LICENSE—MALE.

Application is hereby made for a license for the marriage of _____ to _____, upon the following statement of fact relative to said parties: 1. The full christian and surname of the man is _____. 2. Color _____. 3. Where born? _____. 4. When born? _____. 5. Present residence _____. 6. Present occupation _____. 7. If no occupation, what means has the male contracting party of supporting a family? _____. 8. Is the male contracting party of nearer blood kin to the female contracting party than second cousin? _____. 9. Full christian and surname of father _____. 10. His color _____. 11. His birthplace _____. 12. His occupation _____. 13. His residence _____. 14. Full christian and maiden name of mother _____. 15. Her color _____. 16. Her occupation _____. 17. Her birthplace _____. 18. Her residence _____. 19. Has the male contracting party been an inmate of any county asylum or home for indigent persons within the last five years? _____. 20. If so, is he now able to support a family and likely to so continue? _____. 21. Is this his first marriage? _____. 22. If not, how often has he been married? _____. 23. Has such prior marriage, or marriages been dissolved? _____. 24. If so, how? _____. 25. When? _____. 26. Is the male contracting party afflicted with epilepsy, tuberculosis, venereal, or any other contagious or transmissible disease? _____. 27. Is he an imbecile, feeble-minded, idiotic or insane, or is he under guardianship as a person of unsound mind? _____. Signature of applicant _____. Affidavit follows here.

At first there was manifest some opposition and in instances very harsh statements were made, but finally this all died out, and now not the slightest opposition appears. The highest court has upheld the law in the case of a very rich and prominent man who was luetic and knew it, who was refused a license to marry. He thereupon went to Kentucky and was married, and upon return to Indiana, in due time, the marriage was declared null and void. So, if people with certain hereditary disease get married in other states to avoid Indiana's statute, they must remain out of the state or suffer the penalty.

As the enforcement of the law depends upon the county clerks, all new ones are sent a special letter from the State Board of Health which gives the argument of the law, and makes plain the benefits its rigid enforcement will bring to the state. Of course, this is to educate and to arouse the interest of new officials. We have not sufficient

data for conclusions but it is true licenses to marry are denied daily in the state to those who should not marry, and, although marriage is not necessary for procreation, still it is certain the law has done something toward the end at which it is aimed.

But its great fault lies in its inadequate provisions for enforcement. To correct this defect the following bill was introduced into the last General Assembly in 1911. It passed the House of Representatives but failed in the Senate.

A Bill for An Act entitled An act to prevent the transmission of venereal diseases, and providing penalties.

Section 1. Be it enacted by the General Assembly of the State of Indiana, that it shall be unlawful for county clerks to issue a license to marry to any male who fails to present a medical certificate showing him to be free from blood taint, of feeble-mindedness or insanity, free from open pulmonary tuberculosis, and free from all venereal diseases, said certificate to be sworn to by a licensed physician and to be filed with the usual application for license to marry.

Section 2. The certificate required in Section 1 shall read as follows, to-wit:

I, ———, being a legally licensed physician, do certify that I have carefully and fully examined ———, having applied the recognized clinical and laboratory tests of scientific medicine and find him to be free from all symptoms and taint of venereal disease, free from open pulmonary tuberculosis, and free from blood taint of feeble-mindedness and insanity.

Section 3. If persons resident of this state, with intent to evade the provisions of this act, go into another state and there have their marriage solemnized with the intention of afterward returning to this state and residing here, and do so return and reside in this state, such marriage shall be null and void and such parties, upon returning to this state, shall be subject to all the penalties provided for in this act.

Section 4. Violation of any provisions of this act shall be punishment by a fine of one hundred dollars.

Section 5. All acts or parts of acts in conflict with this act are repealed.

A second law directly relating to marriage makes it unlawful for first cousins to marry, which law seems in harmony with our present knowledge of heredity concerning the degenerative influences of consanguinity.

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Editorial.

MAN ABOVE MONEY.

Colonel Roosevelt in his confession of faith said, "The first charge on the industrial statesmanship of the day is to prevent human waste." This thought dominates the platform of the Progressive party, and the campaign since Colonel Roosevelt's nomination by that party has kept this feature of the contest well in the front.

The profession of medicine has advocated this doctrine from its beginning. Four years ago both great political parties recognized the same principle when they placed a plank in their platforms advocating the creation of a national department of health at Washington. The cause was further ably championed by Senator Owen of Oklahoma, who introduced a bill in the Senate looking to the creation of such a department. The profession is to be congratulated that substantial progress has been made.

Heretofore man's interest has been supposed to be cared for when

his property interests were advanced. Even the institution of marriage, that has been clothed with sanctity by the church and fostered by the state, has been encouraged more as a means of transmitting property than as a means of transmitting a sound body and a normal mind to the offspring. Men of medicine and all others who place the man himself above all property considerations cannot fail to be impressed by this feature of the tenets of the new and lusty political party.

VASECTOMY SUSTAINED.

The simple operation of vasectomy as a means of sterilizing habitual criminals has been upheld by the Supreme Court of the State of Washington as a constitutional method of safeguarding the public. Defective individuals readily consent to the operation when they understand it is harmless and in no way inhibits their physical function except that they cannot impregnate and reproduce their kind.

MILK TYPHOID.

An epidemic of typhoid fever has occurred at Moorestown, New Jersey, that has been traced to a model dairy. The manager of the dairy was a carrier of typhoid and did not know it.

Milk is so frequently the medium of conveying typhoid fever that its use in a raw state should be stopped altogether. Universal vaccination against typhoid fever would no doubt wipe out that disease, but that is a large proposition and not likely to be done, and would not prevent milk from conveying scarlet fever, diphtheria, tuberculosis, or other disease with which it may become infected. Model dairies are a blessing, but the experience at Moorestown indicates that no raw milk should be swallowed at all.

SANITARY LITERATURE.

The State Board of Health of Illinois is publishing in its monthly bulletin very useful and instructive information in the cause of disease prevention and the preservation of health. In no other way can the subject be brought home to every citizen so well as by the perusal of printed matter wherein the subject is treated in simple direct phrase and in an entertaining and narrative style. All this the Illinois State Board of Health is doing remarkably well and it is a pleasure to commend its work.

The bulletin for May, 1912, is devoted to typhoid fever, its

causes and its prevention, and should be read by every householder in the country. As people soon forget, sanitary literature should be frequently repeated and some feature of the work of disease prevention be published at frequent intervals.

Book Reviews

A TEXT-BOOK OF PRACTICAL THERAPEUTICS. With Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M. D., B. Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia: Physician to the Jefferson Medical College Hospital; Laureate of the Royal Academy of Medicine in Belgium, of the Medical Society of London; Member of the Committee of Revision of the United States Pharmacopoeia of 1905. Fourteenth Edition. Enlarged, Thoroughly Revised, and Largely Re-written. Illustrated with 131 Engravings and 8 Plates. Philadelphia and New York: Lea & Febiger. 1912. Price \$4.00.

Fourteen editions of a text-book in twenty years is practically all that is necessary to say of this book of Hare's. The successive editions have contributed largely to the placing of therapeutics upon the scientific foundation where it rests today. The great usefulness and popularity of this book has arisen from the fact that the author recognized that the physician at the bedside needs and desires all the help he can get, and his aim throughout has been to present this help in the best form possible for use by the physician when brought face to face with problems of vital importance to him and his patients.

This fourteenth edition has been thoroughly revised and much new matter introduced, including chapters upon salvarsan, tuberculin, and vaccine therapy. A full description of Bier's method of treatment by artificial hyperemia is also a welcomed addition. One of the newest ideas noticed is regarding the use of cardiac stimulation, as in the use of digitalis in connection with lesions of the bundles of His. This edition retains the old form which has proved so very useful. Part I takes up introductory matter, modes of administration, dosage, incompatibility, idiosyncrasy, etc.; Part II, drugs; Part III, remedial measures other than drugs; Part IV, treatment of disease. Whenever the therapeutic power of drugs discussed in previous sections is considered in relation to the individual disease, these points

are connected by an exceedingly full and complete cross reference.

That this edition will be given a hearty welcome by both students and practitioners is sure, and well will it deserve its welcome, for it is one of the very best books for the student in the study of therapeutics, and is also one of the surest guides and ablest councillors the practitioner can have.

MIND CURE AND OTHER ESSAYS. By Philip Zenner, A.M., M. D.
Author of "Education in Sexual Physiology and Hygiene."
Cincinnati: Stewart & Kidd Company. 1912. Price, \$1.25.

This little volume of essays shows evidence of thought and careful consideration. The author states that the volume is largely devoted to the instruction of the people in matters pertaining to health, with special attention to school life and to the prevention of disease by means of the training and instruction of children. It is certain that each essay will well repay careful reading, and that in each one will be found some thought or idea that will hold the attention and compel reflection.

In the first essay on mind cure the author says: "For today a large part of the world has gone mind cure mad, a state producing an unwholesome mental atmosphere predisposing to disease." Other essays are on the prevention of nervous disease and training the child, treatment and prevention of alcoholism, social disease, defectives, etc. In the last essay on eugenics he carefully explains in simple language Weismann's continuous germ-plasm theory, Galton's laws of heredity, and—what we consider of vastly greater importance—makes clear to the general reader the subject of disease inheritance, explaining the difference between heredity and environment, between inheritance and susceptibility, how rare direct inheritance is and yet how often it is held responsible where it really plays no part. This book will be most useful in throwing light in dark places and in correcting many a wrong impression in the popular mind,—a book for which we would urge the widest circulation.

COLLECTED PAPERS BY THE STAFF OF ST. MARY'S HOSPITAL (MAYO CLINIC) FOR 1911. Octavo of 603 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1912. Cloth, \$5.50 net.

This volume contains the papers written by the staff of the Mayo Clinic during the past year. They have all appeared before in the different medical journals throughout the country and are now collected into a more permanent form, making the book a storehouse of

the records of observations and investigations in surgical pathology, and the clinical records in operative surgery of the staff of the Mayo Clinic. In view of the immense amount of material available at St. Mary's Hospital it is a matter for congratulation that so much of it is made to pay tribute to the advancing of scientific knowledge. Even routine or minor cases, when collected in such numbers and studied in the aggregate, should yield their quota toward fuller and more complete understanding of the matter.

The papers are classed under seven different heads: The Alimentary Canal, Hernia, Genito-Urinary, Ductless Glands, Thorax and Extremities, Technic, and General Papers. There is also included a most appreciative paper, "In Memoriam," William Worrell Mayo. It is certainly a book of value, and anyone engaged in the study of these subjects or who has in charge a case difficult of diagnosis or doubtful as to treatment may find here the aid he seeks.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M. D., at Mercy Hospital, Chicago. Volume I. Numbers III and IV. Illustrated. Philadelphia and London. W. B. Saunders Company, 1912. Published Bi-Monthly. Price, per year: Paper, \$8.00. Cloth, \$12.00.

These numbers fully sustain the reputation established by the preceding ones and in certain respects exceed them in interest. In Volume III the subject of fractures of several different bones, all coming under the head of *difficult* in treatment, is taken up very fully. Cystic goitre and division of the brachial plexus are two subjects of exceeding interest. Another that will be very helpful to the practitioner is upon typhoid spine. In this lecture Dr. Charles Mix very clearly defines the present status of the typhoid vaccines. In this number also readers will be glad to find a full description of Dr. Murphy's five diagnostic methods. These methods, which are constantly referred to in the "Clinics," were original with Dr. Murphy, and their great value in differential diagnosis in abdominal work has been thoroughly demonstrated by years of use. The description of them is taken from an article in the "Archives of Diagnosis," by Dr. Guy G. Dowdall, then a member of Dr. Murphy's staff.

Among the subjects in Volume IV we note acute appendicitis and pneumonia, chronic appendicitis, hypertrophy of the prostate, concussion of the spine with impacted fracture of the vertebrae, traumatic epilepsy, and carcinoma of the splenic flexure of the colon, intestinal obstruction. A new feature of this issue which will prove of great interests to a class of the readers of the Clinics is a verbatim report

of one of the student's clinics, which Dr. Murphy holds for the senior class at the Northwestern. We are sure that such reports will prove interesting and instructive, not only to students still working for their degree, but also to those who have remained students even into their postgraduate days. The series is certainly proving a very valuable one for the profession.

CHICAGO MEDICAL DIRECTORY. Containing a List of Physicians and Surgeons in Cook County, Druggists, Medical Schools, Hospitals, Sanitariums, and Medical Societies. Physicians and Druggists' Street Directory Numerically Arranged. 1912. Price, \$3.00. Published by McDonough & Company, 154 W. Randolph Street, Chicago.

This new edition of the "Blue Book" is especially timely in view of the many changes that have been made in office locations during the present year. So many new buildings have been erected with special accommodation for physicians that there has been a general shifting of offices, changing of hours, telephone numbers, etc. The information contained in this directory is accurate and up to date. This edition again contains the street list of physicians and druggists, which was omitted in the 1911 edition. Another valuable feature is the enlarging of the directory to include all physicians in Cook County.

A COLLECTION OF PAPERS (Published Previous to 1909). By William J. Mayo, M. D., and Charles H. Mayo, M. D. Two octavo volumes, averaging 550 pages each, illustrated. Philadelphia and London. W. B. Saunders Company, 1912. Per set, cloth, \$10.00 net.

This collection of previously published papers is practically a biography of the professional life of the Drs. Mayo. They are also in a more limited sense a history of certain branches of surgery, covering the twenty years from 1885 to 1905. The volumes will be of interest not only to many who have had a personal connection with the now celebrated Mayo Clinic, but will also serve as a valuable work of reference in research work and in the study of the individual case. The volumes are gotten out in the admirable style of the Saunders press—good paper, clear and easily read type, and strong binding.

PHILADELPHIA GENERAL HOSPITAL REPORTS. Volume VIII—1910. Edited by David Riesman, M. D.

Among the most welcomed of the annual reports gotten out by our various institutions is that from the Philadelphia Hospital (Blockley),

Volume VIII of which we now have. The different papers, covering a wide diversity of subjects, are either very practical in character or else investigations along new lines that will ultimately lead to discoveries of great importance.

In the present volume we note papers upon ophthalmic conditions by De Schweinitz, Shumway, Oliver, and Hansel; some clinical points in the treatment of aortic aneurism in papers by Eshner and Beardsley; Burr on the differential diagnosis of locomotor ataxia; a discussion of the Babinski reflex to motor lesions, it being present only if the leg fibres are implicated, by C. S. Potts and T. H. Weisenberg; a clinical pathological study of primary carcinoma of the liver by Howard T. Karsner; bacteriological studies in cases of general paresis by R. C. Rosenberger, and many others of value. In addition there are the regular reports from the different departments, completing a volume of unusual interest.

RULES FOR BATHING AND A CHAPTER ON SOAPS.*

"In 1845 Sir Erasmus Wilson of London, one of the great early students of skin diseases, wrote a book for popular use on the care of the skin, which ran through many editions. The bath had not then become the solemn rite that the Englishman has since made of it, and in his seventh edition Wilson, in commenting on the success of the book, expressed the hope that its popularity had, 'in some degree, contributed to the popularity of soap and water among our countrymen.' A consideration of the bath can hardly be better concluded than by quoting a few of the rules which Wilson prepared for a free bath presented by a friend of his to one of the poor districts of London. The rules are for a swimming bath and require slight obvious modifications for the ordinary tub bath.

"1. Rub the skin and limbs gently with the hands while in the bath; and, in the swimming bath, swim; that you may combine moderate muscular exercise with the action of the water on the skin.

"2. Try to feel when you have had enough—some can bear immersion in water longer than others.

"3. Never abuse the bath by bathing too long; your own sensations are a better test than time.

*The above extracts are taken from Dr. William Allen Pusey's little book, "The Care of the Skin and Hair." This book, recently published by D. Appleton & Co., has met with universal favor, containing as it does so much sound advice and so many practical suggestions on topics of general interest.

"4. Dry the body leisurely, with moderate friction, beginning with the head; then take the arms and body, then the legs and feet.

"5. Rough friction to the skin is never necessary; neither in the bath nor out of it.

"6. Friction has three purposes; namely, to move the circulation in the skin; to exercise the muscles; and to rub off dirt and loose skin.

"7. The cleansing of the skin is very much assisted by soap; soap is tonic to the skin and very wholesome; it removes the old face of the skin and the varnish of dirt that is apt to form upon it.

"8. Never dress until the body is perfectly dry; then the clothing should be resumed leisurely, to give the skin time to feel and breathe the air. A great authority on the bath, Mr. George Witt, F. R. S., finishes a code of rules for the bath with these memorable words: 'Finally, the bather should dress deliberately, walk away slowly, and reflect on the blessing that he has enjoyed.'

"9. If the bather turn faint or sick, it is the consequence of some indiscretion; he should lie flat upon the ground, upon his side; and dry and dress himself slowly as soon as he has recovered.

"10. If the bather be in a state of perspiration, he should take a tepid bath before he resorts to the cold bath, and if he be exhausted or fatigued, he may still take a tepid bath—but on no account take a cold bath.

"11. The time spent in the bath must be regulated by the sensations of the bather; it may be longer for a tepid bath than for a cold bath. From five to fifteen minutes may be enough for the cold bath; from ten to twenty minutes for the tepid bath. But this time may be prolonged if the bather be engaged in the exercise of swimming."

SOAPS.

Composition and Properties. The soaps in use for cleansing purposes are sodium or potassium salts of the fatty acids. Fats are rather unstable combinations of these acids with glycerine, and when they are boiled with solutions of caustic potash or caustic soda they give up their glycerine, which separates in the liquor—and is subsequently recovered—and combine with the sodium or potassium to form soaps. Potash soaps are soft soaps, the most familiar example of which is the pharmacists' so-called green soap; while soda soaps are harder and furnish the various familiar solid toilet or laundry soaps of commerce. The soda or potash in soaps is a stable ingredient not subject to deterioration in quality, while the fats are highly unstable and liable to complex decomposition, so that upon the quality of fats used

largely depends the quality of soap. For this reason the purity and kind of fats are very important in the manufacture of soaps. Oils make soaps of less body—softer soaps—than the harder animal fats; therefore in the manufacture of soaps there is usually combined a portion of oil with the tallow which is the chief ingredient. For this purpose the oil usually added in toilet soaps is cocoanut oil, which gives the soap an agreeable soft feel and produces a tenacious abundant lather. In moderate proportion cocoanut oil is a good addition to toilet soaps, but beyond a moderate proportion it has objectionable qualities; it contains a number of very unstable fatty acids which readily decompose—become rancid—and thus are irritating. While, therefore, a soap containing a large quantity of cocoanut oil will be very smooth and lather abundantly, its apparent blandness is deceptive and it is harsh in its effects on the skin. Such cocoanut oil soaps are usually white, translucent, have a peculiarly smooth oily feel, and lather very abundantly. They lather well in hard water and are often exploited as hard water soaps.

Normally in soap making there is not a complete combination of the caustic potash or soda, the alkalis, with the fatty acids, but a certain amount of free alkali remains incorporated in the soap. This is the free alkali over which advertisers make so much. In soaps for rough purposes this is not an important objection and no great effort is made to get rid of a moderate proportion of free alkali. The alkali increase the cleansing power of the soap and there are few objects upon which a laundry soap is used which a moderate excess of free alkali damages. But free alkali renders the soap very much more irritating and the frequent use of such a soap cannot be tolerated by a delicate skin. There is no need for free alkali in toilet soaps and in them it should be reduced to a very small percentage. In good toilet soaps the free alkali amounts to not more than one-fourth per cent. In this quantity it is not deleterious to the healthy skin. When, however, it is desired to overcome completely the effect of the alkali, soaps are superfatted, as it is called, by the addition of about one per cent of lanoline, a fat which does not become rancid. These superfatty soaps are the least irritating of soaps and are little, if at all, less efficient for cleansing the skin than ordinary toilet soaps. When soaps are for any reason badly borne by the skin, these superfatted soaps are useful, although such refinement in soaps is not necessary for the ordinary individual.

Water can be incorporated in soap in very large proportion—up to 30 or 35 per cent—without changing its consistence; it does no

harm except to load the soap with a useless ingredient. Good soaps contain from 12 per cent to 25 per cent or 30 per cent, when fresh; the milled soaps as low as 12 per cent; the cold made soaps—castile, transparent, and floating soaps—25 per cent to 30 per cent; as soap ages the water evaporates and the soap becomes dryer and harder. Floating soaps are made by the simple device of incorporating air in microscopical spaces in the soap—mixing it in while the soap is in a fluid state. It does the soap no harm. The commonest actual sophistication of soap is the addition of rosin to it. Saponified rosin—sodium resinate—is not a true soap; it is sticky, if not harmful; and, while it will cleanse, it is a poor ingredient of toilet soaps. It is more commonly used in foreign than in American toilet soaps. Its resinous odor is sometimes perceptible and, if it is abundant, its presence is indicated by a slight stickiness of the skin.

Soap, when it solidifies, is normally crystalline and for that reason opaque. Transparent soaps are made by adding to the soap, alcohol or glycerine or sugar to an amount that prevents crystallization and holds the soap in a colloid (amorphous, gelatinous) state. This in no way damages its quality. Transparent soaps are, however, usually cold made and are apt to carry an excess of free alkali, for in its absence the soap will not maintain its brilliancy. The only way to avoid this is by dissolving the soap in alcohol—an expensive process; so that as a rule, only the best transparent soaps are free from an excess of alkali.

The natural color of soap varies from a dirty yellow to white. The natural color of the best quality of toilet soap is a creamy white; the dirty yellow of common laundry soap illustrates the color of cheaply made, impure soaps. Pure soap may be perfectly white, but whiteness is in itself no index of especial purity in soaps. Floating soaps, for example, are white, because of the minute air spaces throughout their structure. An opaque “flat” white without any translucence usually indicates the presence of a considerable quantity of some useless filler, as starch, zinc oxide, and similar cheap adulterants, and is an evidence of dishonesty in manufacture, which should make one suspicious of its other qualities.

Pure soap has a slightly disagreeable characteristic “soapy” odor, to overcome which a small amount of perfume is properly added. The essential oils of which perfumes consist are strong antiseptics and, so far as they have any effect upon the quality of soaps, they are at least not deleterious.

Castile Soap. Castile soap is a soda soap made with olive oil and is usually imported from olive-raising countries along the Mediter-

anean, where it is made. Castile soap has a high popular reputation for superiority which is hardly justified. It is made in a crude way and it has no known maker with a reputation to maintain who is responsible for it. Mottled castile soap is still less likely to be pure. Many so-called castile soaps, especially those having distinctive names, are plain cocoanut oil soaps, and are not good toilet soaps. There is no other soap so much imitated as castile.

Green Soap. Green soap—a potash soap made with linseed oil with the addition of alcohol—is an alkaline soft soap, which is useful where it is desired to “cut” grease, but it is an irritating soap, not to be used indiscriminately. The so-called tincture of green soap, by the way, is not green at all, but of an amber color. When it is green it is colored. A very much more agreeable green soap—one free from the unpleasant odor of linseed oil and of lighter color—can be made with cottonseed oil or olive oil, and it is to be hoped that makers will in time, furnish this soap for the market.

Medicated Soaps. Medicated soaps are of little value, except as soaps, and should not be used inadvisedly. The addition of almost inert substances, such as borax, boric acid, and witch hazel, does no harm; but soaps impregnated with strong and always irritating agents, such as corrosive sublimate, salicylic acid and carbolic acid, should not be ignorantly used if these ingredients are present in large enough quantity to produce any effect. Even in the hands of experts the medicated soaps have a very limited field of usefulness.

Action of Soaps. Free alkali will combine with fats and many other substances to make them soluble in water and to that extent free alkali adds to the cleansing action of soap. But, as a matter of fact, the cleansing action of soap is independent of the presence of free alkali. It is due in part to the fact that soap is itself a solvent for fats, but more to its property of emulsifying fats and holding in suspension substances that are in the form of minute particles. Any substance that produces a viscid solution in water has the same effect in less degree. A viscid solution of glycerine in water or of tragacanth or notably of soap bark—substances without any trace of free alkali in them—has to some extent the same action as a mixture of soap with water. The presence of free alkali, therefore, is not necessary to the cleansing action of soap, and the smaller its quantity in toilet soaps the better.

Selection of Soaps. The essentials of a good soap are that it should be well made from clean fresh fats, be free from an excess of alkali or cocoanut oil, not sophisticated with rosin or other unnecessary ingredients, and that it should lather freely. These conditions met,

the user may consult his own taste as to the hardness and feel, the odor, the color, or the other qualities that have to do with agreeableness. As a matter of fact, for all of the essential qualities of soap the user is dependent upon expert advice, or, more, upon the reliability of the manufacturer; and for that reason he is surest when he gets a soap bearing upon it the name of a firm which has a reputation to maintain and which has assumed responsibility for it. There are many such American soaps—and foreign. It is also best to buy soaps made for toilet use and not of the lowest price. Cheap soaps are made from cheap fats, they are not leached thoroughly to remove alkali, and they are not as suitable for toilet use as the better grade of toilet soaps.

In the personal choice of soaps there is room for the wide exercise of whims, and full advantage is commonly taken of this opportunity by soap makers. That is the reason that makers put out so many varieties of their toilet soaps with euphemistic names—one variety of which one person imagines suits his skin, while another suits the next exacting individual. Really the manufacturer makes all of these varieties from one or a very few stock soaps, which he colors, perfumes, and otherwise modifies to produce his various brands. If, therefore, one avoids medicated soaps, cheap common soaps, and freak soaps which claim to produce special effects on the skin, and confines himself to standard soaps of reputable manufacture, he may exercise his own choice as to their agreeableness. If he wants a soap for an especial therapeutic or curative quality, he must seek expert advice. It is a rule that holds good with soap, as with many other things, that the more extravagant the claims for extraordinary virtues made for it by its sellers, the more skeptical should the buyer be toward it. A soap should be bought, not as a panacea for skin troubles, but for its humbler quality of cleansing the skin.

News Items

For Rent.—Large room with private exit in choice private suite. Inquire 1010 Stewart building.

Office Hours to Rent.—3 to 5 p. m. Inquire of Dr. L. N. Grosvenor, 1 to 3 p. m., 705 Venetian building, 15 East Washington street. Telephone Central 1797.

For Rent.—Office hours in a newly finished and newly furnished suite. Attendant furnished. Dr. John L. Porter, 907 Chicago Savings Bank building, 7 West Madison street.

Wanted.—Young medical student or doctor to correspond with us about a new way of money and friends making in the health and efficiency promoting line. Address Geo. A. Schmidt (IT) Co., 236-238 North avenue, Chicago. Established 1875.

Dr. Frank H. Blackmarr desires to announce his return to office and hospital practice of Electro-Therapeutics—X-ray Therapy, Radium Therapy, X-ray Laboratory for rapid work. Office hours: 935 Marshall Field building, 8:30 a. m. to 9:30 a. m., telephone Private Exchange 1; 551 E. 47th street, 11 a. m. to 3 p. m., telephone Oakland 1719.

Personal.—Dr. and Mrs. E. N. Elliott have returned from a four months' tour of Europe.

Dr. Theodore B. Sachs has resigned as physician in chief of the Chicago Winfield Sanitarium.

Dr. I. J. K. Golden was married on July 25 to Annette Elizabeth Green. They will be at home Oct. 1 at 2233 West North avenue.

Dr. and Mrs. William Sadler of La Grange have announced the marriage of their sister, Miss Anna Belle Kellogg, to Wilfred Custer Kellogg of Battle Creek, Mich., on August 28.

Dr. Isaac A. Abt announces the removal of his residence to 4810 Kenwood avenue.

Dr. Julius Grinker left Chicago on September 7 for the east, on his way to Europe.

Dr. William A. Mowry has been appointed a house physician at the French Lick Springs Hotel.

Dr. and Mrs. Will Walter have returned from a trip abroad.

Dr. Antonio Lagorio has been elected vice-president of the board of directors of the Chicago Public Library.

Dr. Ernest S. Moore, physician in charge of the County Tuberculosis Hospital, Dunning, has resigned.

Dr. and Mrs. Arnold Klebs have returned to this country for a visit.

Dr. and Mrs. John Edwin Rhodes have returned to Chicago after spending the summer in the Catskills.

Dr. and Mrs. R. D. MacArthur have reopened their Chicago residence after spending their twenty-fifth summer at Old Orchard Beach, Me.

Dr. and Mrs. Thomas J. Watkins have returned from an extended European trip.

Dr. E. A. Fischkin left on September 4 for Europe.

Dr. and Mrs. Rudolph W. Holmes have left for a six weeks' trip abroad.

New Nurses' Home.—A six-story fireproof nurses' home is to be erected for the nurses of Presbyterian Hospital, which is to be connected with the hospital by a tunnel. The home will be equipped with rooms for 175 nurses and will have a roof garden.

Physicians' Building.—Several physicians have organized the Clinical Society of Philadelphia. One of the objects of the society is to erect a building in the central part of the city to cost about one million dollars which will be used entirely for offices for physicians.

Lead Arsenate in Canned Peaches.—The Georgia state pure food service has discovered quantities of arsenate of lead in preserved peaches. Consequently an examination of samples from each of the peach-producing districts of the state has been ordered. It is suspected that spraying of the trees just before the ripening of the fruit is responsible.

New Store for Well-Known Opticians.—Almer Coe & Co., who have been established here in Chicago for nearly thirty years, have opened a new store in the Otis building, 6 South La Salle street. In connection with their other two stores, one at 134 North State street, the other at 82 East Jackson boulevard, this will enable them to furnish prompt and efficient service in all their departments.

Successful Candidates in the County Hospital Examination.—Of the 290 who took the examination for membership on the Cook County Hospital attending staff, 79 passed the test. The leaders in the various departments were as follows: Surgery, Dr. Daniel N. Eisendrath; medicine, Dr. Joseph A. Capps; dermatology, Dr. K. A. Zurawski; dental surgery, Dr. W. H. C. Logan, and diseases of children, Dr. Henry W. Cheney.

Civil Service Examinations for Trained Nurse.—The United States Civil Service Commission announces that the examinations for trained nurse in the Isthmian Canal and the Indian services will be held on October 16, 1912, as scheduled, but that the announcement of the examination for this position in the Philippine service is canceled because of advice from the Bureau of Insular Affairs that future vacancies in this position in the Philippine service will likely be filled by Filipino women.

Laboratory of Hygiene, Pathology and Bacteriology.—Dr. Maximilian Herzog has been away on his vacation during part of August and September, and during this time the work in clinical microscopy and chemistry, Wassermann serum tests, etc., has been in charge of Dr. George Ives, a graduate of Johns Hopkins Medical School. The work in sanitary investigations, examination of foods, drugs, water and disinfectants, etc., has remained in charge of Dr. Arthur Lederer.

New Law to Check Opium Smuggling.—In order to check the smuggling of opium, a new law is being drafted for the Treasury Department

by United States District Attorney McNab, which contains a clause that will go a long way toward attaining that desired end. While the present statute provides fines for the captains of vessels upon which opium may be found, the new McNab law provides that the finding of opium aboard a ship shall be *prima facie* evidence of negligence on the part of the steamship company, and a fine equal in amount to the market value of the opium shall be at once imposed.

Legally Qualified Physicians in Illinois.—The official register of legally qualified physicians recently issued by the State Board of Health covers the counties of Illinois from Adams to Woodford, with the exception of the city of Chicago. This register is revised to April 15, 1912, and is an excellent source for obtaining accurate and authoritative information. Because of many changes of address among Chicago physicians during the present spring, publication of a list of physicians of this city has been deferred, but such a register devoted exclusively to Chicago will probably be issued in the near future.

Congress of Comparative Pathology.—The first International Congress of Comparative Pathology will be held in Paris from the 17th to the 23rd of October. This congress, organized by the Society of Comparative Pathology, will be occupied not only with the diseases concerning both men and animals in all series, but with the connection existing between the diseases of different species, as well as with vegetable pathology and the connection between certain diseases of plants and animals. All correspondence concerning this congress should be addressed to the chief secretary, M. Grollet, 42 rue de Villejust, Paris, France.

A Great Public-Health Exhibition.—The Fifteenth International Congress on Hygiene and Demography is to be held in Washington in September 23-28, this being the first time the Congress has ever convened on American soil. Buildings have been especially erected for this Congress in Potomac Park. Dr. Joseph W. Schereschewsky, of the United States Public Health and Marine Hospital Service, will be in charge of the exhibition, various groups of which will show what America has done in the prevention of disease and the promotion of health, including a demonstration of the sanitary working plans of the Panama Canal.

Woman's Sympathy a Factor.—In the Hospital of St. Anne of Paris, where the enormous number of 4,000 insane people are treated annually, an effort is being made to have women substituted for the male attendants. Dr. Mangin, the great French alienist, says that the greater kindness and sympathy has a decidedly beneficial effect. He has abolished straight-jackets and all other like equipment in his treatment. Coincidentally, we learn that Prussian authorities are to open in Berlin this fall a prison hospital to be managed entirely by women—guards, wardens, inspectors, nurses, etc. Reasons very much the same as at St. Anne's are given.

Payment of Humanity's Debt to a Hero.—We note with pleasure that Senator Myers of Montana introduced a bill into the last Congress to pay to the widow of Dr. F. B. McClintic the sum of \$5,760. Dr. McClintic, who died last month, was the Public Health and Marine Hos-

pital Service expert upon Rocky Mountain spotted fever, the disease which ultimately caused his death. For some time he had been investigating it, searching for its cause and studying to find means of prevention and cure. He had succeeded in almost completely eradicating the disease from most of its strongholds in the northwest, and it was just in the hour of his triumph that the enemy caught him as it has so many other noble fellows. We sincerely wish that recognition of "hero service" in the cause of humanity, such as this, could be more frequently recorded.

To the Readers of the Chicago Medical Recorder.—About six years ago the writer began to use vaccines in the treatment of typhoid fever. Since that time he has thus treated more than one hundred cases and has obtained numerous articles upon the same subject written by physicians in various parts of the world. It seems possible, however, that some may have escaped notice. He also realizes that many of the profession may have treated some cases without reporting them. A paper upon the subject is now in the course of preparation. In this it is earnestly desired to incorporate reports from a large number of cases, good, bad, and otherwise. He accordingly makes the following request to the readers of this journal:

Will any one who has used vaccines in the treatment of typhoid fever, whether but one case or more, kindly communicate to him that fact accompanied by name and address of the reporter. If the results have already been reported, a note of the journal in which they appeared will be sufficient. If they have not been reported, a short blank form will be sent to the physician to be filled out. Due credit will be given in the article to each person making a report. If any physician happens to know of other confreres who have any such cases, it will be appreciated if he sends their names, as they may not happen to read this note. It is hoped that by this means a sufficient number of cases may be collected to somewhat definitely settle the now mooted question whether vaccines are or are not of benefit in typhoid therapy.

Reports of cases will be accepted at any time in the future, but preferably by November or December of the present year.

Kindly communicate with Dr. W. H. Watters, director of the department of pathology and bacteriology, Evans Institute for Clinical Research, Boston, Mass.

State Medical Service.—The marked tendency of the times toward paternalism, social cooperation, nationalization, etc., is strikingly shown by the organization in England of a "State Medical Service Association." Its promoters make it clearly understood that the step was not taken as in any sense an answer to the "Insurance Act," but was really planned some years before the advent of the latter into the arena of British politics, and is intended as a benefit to both the public and the medical profession.

The platform may be briefly stated: (a) The whole profession to be organized on the lines of other state services now in existence; (b) entry to the profession to be by one state examination; (c) each member of the service to be paid an adequate salary, increasing gradually,

according to length of service and position in the service, and to be entitled to a pension after a specified number of years or in case of permanent disablement; (d) members of the public, as far as practicable, to have free choice of doctor, but no doctor to be called upon to have charge of more than a specified number of patients; (e) one of the primary objects of the state service to be to unite preventive and curative medicine; all hospitals to be nationalized and to be used for the purpose of consultative, operative, and therapeutic work at the request of and in conjunction with the patient's own doctor; (g) the services of the state doctors to be open to every man, woman, and child—rich or poor; (h) the state medical service to be administered by a board of health under a minister of public health with cabinet rank, assisted by expert medical advisers.

Doctors all over the world will be interested in knowing how this proposition will be received by the British government and public. It is to be presumed that Mr. Lloyd George at least will be interested in this proposal to nationalize the entire medical profession.

In Appreciation of the Doctor.—The Century Magazine for September, 1912, contains the following appreciative editorial regarding the medical profession, with incidentally a word for the Owen Bill:

"As one cannot draw an indictment against a community, so one cannot reasonably give sweeping approval of a profession; but now and then—perhaps in the lifting shadow of some dread illness happily surmounted—one is moved to a new sense of the obligations under which we all rest to the physician. Sometimes this is obscured by the conduct of those who 'don the livery of heaven to serve the devil in'—a class against whom the profession wages persistent warfare; but on the whole not even 'the cloth' presents a higher standard of service to humanity. Sordid and base, indeed, must be the man who can deliberately violate the solemn dedication of the Hippocratic oath, to which he must subscribe before he is accorded his degree. * * * And there is need of this vow, if society is not to go to pieces, for little as we know of the physician, it is little of us that he does not know—our foibles and weaknesses, our sins and sorrows—and rare is the man or woman who is not debtor to his skill, his sympathy, his cheer, and his loyal devotion. It is always with a pang that we read of the death of such a doctor, trusting that he may have received in his last days some repayment in kind for all that he has given of service to others.

"In the memory of many such experiences it is with indignation that one hears the rank and file of this noble profession pilloried as 'the doctors' trust' by those opposed to the bill of Senator Owen for a National Department of Health. It is not necessary to probe for the motives of those who are fighting this admirable measure. Doubtless many, especially those of them who profess the faith of Christian Science, are conscientious, but nevertheless, under the banner of 'medical freedom,' they are playing into the hands of patent-medicine manufacturers, adulterators of food, and medical charlatans, to the peril of the public health. The Owen bill will merely extend to the whole country and make more effective the kind of sanitary guardianship which in the city of New

York is accomplishing a progressive and astonishing reduction of the rate of mortality. Imagine for a moment the Department of Health of this city and port discontinued; it would not be forty-eight hours before we should be exposed to physical dangers comparable only to the brood of Pandora's box.

"The fact is that in the practical application of preventive medicine American physicians are acknowledged to be the leaders of the world. They have not lost the primacy in this respect which twenty years ago led their confreres in Vienna to say: 'We are astonished at your achievements; over here we wait with impatience for the publication of your volumes.' Twenty-five years ago Mr. Bryce in his great book, 'The American Commonwealth,' quoted the appreciation of 'competent authorities' of our 'contributions to biology and medical science.' 'Indeed, it is remarkable,' he said, 'how far from showy and sensational is the bulk of the work (in general science) now done in America.' What must he now say of the great proportions which medical and surgical research have since attained! The pursuit of medicine in America fairly seethes with progress and interest. It has all the zest of exploration. Millions of dollars are invested in the study of diseases once thought incurable; unrelenting warfare is waged upon contagions, infections, and heredity; the education of the public on matters of health is systematic and thorough, and back of the professional honor which impels it all is a spirit of quiet altruism which is a better substitute for the knighthood of the Middle Ages. Once more we say, gratitude and honor to the good physician!"

Facetiae Medicorum

HIS FINISH IN SIGHT.

Old Soque—Doctor, what is the easiest way to stop drinking?

Doctor—The easiest way for you? Why, keep on drinking.

SHOWING NO PARTIALITY.

Mrs. Baye—She is simply mad on the subject of germs, and sterilizes or filters everything in the house.

"How does she get along with her family?"

"Oh, even her relations are strained."—Tit-Bits.

COMMENT BY B. L. T.

"Baptism Follows Wedding."—British American.

A similar sequence obtains this side of the Canadian line.

FULL EXPLANATION.

Passenger—"Why are we so late?"

Guard—"Well, sir, the train in front was behind, and this train was behind before besides."—Punch.

HE KNEW WHEN.

"The time will come," thundered a suffragist orator, "when women will get a man's wages!"

"Yes," sadly muttered a man on the rear seat; "next Saturday night."—London Tit-Bits.

THE REMEDY.

"Wot your pore 'usband wants is rest. Wot's needed is a sleepin' draught."

"When should you give it 'im?"

"Oh, don't give it to 'im! Take it yourself!"—London Opinion.

COME TO STAY.

Doris was radiant over a recent addition to the family, and rushed out of the house to tell the news to a passing neighbor.

"Oh, you don't know what we've got upstairs!"

- "What is it?"

"It's a new baby brother!" and she settled back upon her heels and folded her hands to watch the effect.

"You don't say so! Is he going to stay?"

"I guess so (very thoughtfully). "He's got his things off."—Everybody's Magazine.

NO OFFENSE.

She—Pardon me, sir, for walking on your feet.

He—Oh, don't mention it. I walk on them myself, you know."—Boston Transcript.

A SCIENTIFIC DEFENSE.

"You are charged with selling adulterated milk," said the judge.

"So I understand, your honor," said the milkman. "I plead not guilty."

"But the testimony shows that your milk is 25 per cent water," said the judge.

"Then it must be high-grade milk," returned the milkman. "If your honor will look up the word milk in your dictionary you will find that it consists of from 80 to 90 per cent water. I'd ought to have sold it for cream."—Judge.

THE CHICAGO MEDICAL RECORDER

OCTOBER, 1912.

Original Articles.

TENDENCIES OF MODERN SURGERY.

By HENRY T. BYFORD, M. D., CHICAGO.

He who would tell of the future must look into the past where it lies mirrored. He who would understand the present must look to the future and wait until it tells him what has become of the present. It would undoubtedly be pleasant and perhaps profitable for us to follow the fashion of converting the annual address on surgery into an arithmetical sum in addition by reporting the accomplishments of the past year; but I haven't the gift of prophecy to enable me to tell what in the future will be found good, and as such should be recorded, nor what will be found bad, and as such should be forgotten. What has been done since our last meeting should be tested in the future by the work of workers rather than be rated at present by the talk of talkers. I will therefore content myself with a discussion of tendencies rather than a determination of values, and will begin by taking a look into the past, hoping by comparing it with the present to discover the road which modern surgery has been traveling and the direction it is taking and should take toward the future. To this end I will first recall to your mind some of the conditions that have existed within the memory of many of us.

We know that some of our preceptors obtained their medical education in the offices and on the circuits of their preceptors and procured licenses to practice upon the basis of such education. When they had practiced for a longer or shorter period they were able

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by attending two winter terms of six or seven months each at a medical college to obtain the degree of M. D. Up to the year 1870, when I began the study of medicine, the colleges delivered only one course of instruction and in order to keep the students out of mischief for two winters required them to sit all day and listen to all of the lectures of that course in the first year and to repeat the performance in the second year without variation. Laboratory work comprised two or three hours a week for two or three weeks of qualitative analysis and blowpipe combustion. Microscopic work consisted in looking at normal histological tissue and at a live frog's foot in the amphitheater. Physiological demonstration culminated in the opening and inspection of the abdomen of a dog in the lecture room and then killing it with chloroform.

It took the conservative professors many years to work out the problem that by attending the primary half of the course for half a day during the first winter and the senior half for half a day during the second winter the students could acquire the same amount of learning with half the sitting, and thus have time for doing something besides sitting. The quizzing was done, when it was done, during the lecture hour by the professor. The quizzing was a difficult problem for the professor, since half of the students were capable of understanding only half of what they heard, and the necessity of covering the whole field of medicine in one course of six or seven months left but little time for quizzing. They undoubtedly expected the students to pick up some crumbs of knowledge from their preceptors, and from clinics which consisted in viewing operations from a distance and listening to didactic lectures at the bedside.

If a wise man had at that time looked forward to and planned the extended, complicated and expensive system of medical education of to-day he would have been considered an impractical dreamer, out of touch with the times.

What I have said applies, of course, to medicine in general and largely to college work. Let us now consider some of the changes in the practise of surgery.

Fifty years ago operations were performed by preference in the patient's home in the city or country, or anywhere so not in a hospital over which infection ever hovered like a flock of invisible buzzards. Preparation of the patient, surgical nursing, aftertreatment and antisepsis were in an entirely undeveloped, I might say, chaotic state. Major operations were looked forward to by the patient with terror, and the name hospital was associated in the popular

mind with horrible experiences. Those who required an operation in one of the closed cavities of the body waited until death was imminent, made their will, said farewell to their friends, and seldom disappointed their heirs.

As antiseptic and aseptic methods were developed, private hospitals were fitted up in the medical centers, in which the evils connected with the general hospitals were largely eliminated. Preparation for operations, antisepsis, trained nursing, personal attention of the surgeon to the aftertreatment and afteroperations began to tell. Surgeons began to understand the dangers, and patients began to escape them. With complete control of the patients and their surroundings and with the assistance of personally trained attendants, the surgeons invaded the sacred recesses of the body with triumphant success. Under such conditions Lawson Tait accomplished marvels for the times in which he lived. Even in the general hospitals the medical staffs were placed in complete control, to the exclusion of all interference or participation of outsiders in their surgical work. Conditions were most favorable for the accomplishment of the best individual results.

Before long the operative technic of many of the major operations was perfected and the details of asepsis systematized and popularized. Post-graduate schools were established by men skilled in technic and versed in asepsis, and post-graduate courses were given just long enough to impart to aspiring young surgeons a dangerous amount of knowledge and a disastrous kind of confidence. General hospitals were built in the larger towns throughout the country and post-graduate students began to do the operating in them for their communities. A post-graduate course was popularly supposed to qualify a man for a place in the front rank of surgery. As a result the major operations were no longer sent in such large numbers to men with private hospitals conducted on the closed door plan. In large cities the general hospitals, in order to retain their patronage, had to throw open their doors to the profession and permit any physician or surgeon to perform any operation he chose to undertake, as was done in the country hospitals. The private hospitals found themselves unable to compete with the heavily endowed general hospitals under the complicated and expensive system connected with modern aseptic methods and the luxurious accommodations for the comfort of the patients and their friends, and soon had to close their doors, so that today the general bulk of major surgery is done in general hospitals. Although many specialists and older operators

are working in general hospitals, a large number of men with defective training are working alongside them and are doing everything in surgery. They do the most complicated and surprising of operations. And thanks to the organization by the hospital of a rigid aseptic system their patients often get out of the hospital alive and sometimes without serious bad results, and are effusively grateful to the operators for getting them out of the trouble they got them into. And the hospitals, by serving them in the operating rooms and caring for the patients, publicly endorse their work, and the hospital authorities know not what to do.

As a result of this democratization of the practice of surgery the younger surgeons in small communities keep the work at home and city surgeons, seeing their occupation going, put in their spare time learning and performing the operations of the specialists. Many of the specialists, feeling the pinch, are performing the operations of general surgery. Old dogs are learning new tricks—to offset the tricks of the young ones.

Competition, which nowadays is not considered the final and supreme regulator of business that it used to be, seems to be the supreme regulator of the practice of surgery. Surgeons underbid each other and patients shop for bargains. Those whose business instincts are too pronounced to be influenced by conscience compete for trade by offering or granting commissions. Physicians who have no conscience sell their cases to the highest bidder instead of seeking for them the best aid obtainable. The profession has apparently joined the procession of corrupt exploitation that characterizes this commercial age, this golden age, this age in which the golden end justifies the guilty means. In saying this, I am not blaming surgeons for doing what they have been publicly authorized to do, nor for the presence of so many black sheep in their flock. I am merely stating facts and condemning conditions.

The progress has been from special work done by special men in special hospitals with specially trained nurses and assistants, to general work done by general men in general hospitals with generally trained nurses and assistants. The inexperienced and the poorly prepared surgeon gets the benefit of working in hospitals which not only impart dignity to his deeds, but provide the best facilities and enforce the best methods for work, both in operating room service and nursing, and thus not only enable him, but teach him to do better and bigger work.

On the other hand the specialist and experienced surgeon has

often to dispense with things that a general hospital cannot provide and that he would have if he had personal control of details and the personal training of assistants, and he therefore cannot do as good work as under the old system. The tendency of this generalization has been for the people to get more and more of the better work of the poorer surgeon and less and less of the best work of the trained special surgeon. On account of the competition the patient pays less for his surgery and gets less for his money.

We must surely admit that everything connected with surgical practice is not ideal and that conditions cannot all go on as they are going now. But we cannot return to old conditions. That would be equivalent to saying that we are going wrong, and that there is no benefit in the new. We cannot give up our well conducted hospitals with the improvements that have been made possible by their large endowments and extended patronage. Private hospitals cannot provide the same facilities and are scarcely to be reckoned with. The path of progress lies not in going back to the private hospital system, but in making the facilities for the best work as good at the large hospitals as they could be in privately conducted ones. It does not lie in the direction of restricting the operation to the few, but in preparing many to do it properly.

The hospitals are doing all they can. The thing most needed is a better preparation of the men who are permitted to do the work. The present tendency of the public to turn over the new and complicated operations to the young graduate or the general practitioner who has taken a sitting course of six weeks in a post-graduate school has gone too far. The interests of the public demand that there be a development in medical education that will provide the surgical training that the surgeon now gets too largely through his practice upon his patients.

Nor is it doing the surgeon justice any more than his patients that he should be called upon to diffuse his studies and scatter his experience over a field so large that he cannot hope to acquire a proficiency in the diagnosis and differentiation of all of the surgical diseases and conditions connected with them, nor be able to form a reliable opinion as to operability or desirability of operating, to say nothing of the choice of operation and the adaption of methods. What the mind directs and the hand executes daily or hourly is apt to be well done. What the mind directs and the hand executes at long intervals will fall short of excellence in proportion to the in-

frequency of performance and to the number of other things that occupy the mind and hand in the intervals.

In condemning such general diffusion of surgical work I do not mean to recommend a stricter adherence to the specialties along the old lines. I would rather suggest that all surgeons should be prepared for their operations in the concrete sense before they are permitted to perform them publicly and independently. This would necessitate more specialized early education of the surgeon and an individual development upon lines for which he is best adapted, or upon which he is thrown by circumstances, or toward which he directs his work by preference. If he can attain universal surgical proficiency by living long enough and without practicing text book knowledge upon unfamiliar cases, then let him do everything in surgery, but not until then.

I cannot better illustrate the growing need of selection or specializing in the study of medicine than by quoting a few lines from Wm. M. Polk's article on "Medical Education in New York." (Surgery, Gynecology and Obstetrics, August, 1912, page 8 of Clinical Congress Supplement.) Under the heading "Teaching Along New Lines," he says:

"The scope and character of the teaching along new lines is or should be a measure of the progressive aspect of teaching. We select at random a large number of the subjects which were not recognized a few years ago; hydro- and physico-therapeutics, neurological surgery, including surgery of the peripheral nerves, diseases of the circulation including the Nauheim treatment, tuberculosis and phthisiotherapy, epilepsy, diseases of old age, tumors, immunotherapy, food poisoning, psychotherapy, medical economics, physiological therapeutics, intubation, nutrition in health and diseases, contagious diseases, speech defects, autopsy technique, radiology, medical physics, neuropathology, clinical physiology experimental therapeutics, anaesthesia, neuroanatomy, anatomy in the living, medicolegal pathology, microphotography, life insurance examination, quarantine sanitation, sanatorium treatment of tuberculosis, infant feeding, manufacture of serums and vaccines, medical society drill, proctology, radium therapy, phototherapy, hematology, history taking, cystoscopy, cystoscopy in the female, abdominal diagnosis, antepartum obstetrics, physical diagnosis of tuberculosis, infant diagnosis, lumbar puncture, histopathology of the skin, radiography of the sinuses, bronchoscopy, esophagoscopy and gastroscopy, foreign bodies in the eye, medical gynecology, surgery of hernia, cadaver courses for all the specialties

(anatomy and surgery), demonstration of instruments at factories, special courses under tropical medicine (helminthology, et cetera)."

This list might be supplemented by a long list of things that have been added to the student's mental burdens along *old* lines.

Evidently the present undergraduate course of instruction is not all it should be and will be, although the problem is being worked out as fast as funds will permit by those who have it in charge. The subject is so interesting and pressing that I will occupy a few moments in calling to mind some of the modifications and additions to our methods of teaching and licensure that might be of benefit in preparing students for better work, and for securing better surgery in practice. Among these are a fifth year in college for practical training, an improved system of hospital internship, practical post-graduate courses, operative and experimental courses on living animals, operative courses on the cadaver, an assistantship in a clinic or in the private practice of a surgeon, degrees or titles differing according to the character of the instruction and licenses from the state to conform to qualifications. Examinations should be more practical than at present with reference to ascertaining what the applicant can do as well as what he can recite.

In the fifth year of the medical course the student would learn the practical and technical part of diagnosis or treatment. He would have adequate instruction in laboratory diagnosis including the methods of obtaining and examining the blood, the contents of the stomach and the different excretions and secretions in health and disease; instruction in bedside diagnosis with a short but real hospital service as assistant in hospital and dispensary clinics and to hospital internes, including case-taking, the preparation and after-treatment of operations at which he had assisted in some capacity, wound dressing, hypodermoclysis, intravenous medication, etc.; instruction in practical obstetrics, including antepartem and postpartem abnormalities, the use of the methods and instruments of special practice and investigation, the estimation of blood pressure, the employment of vaccines and antitoxins and other things connected with internal medicine as well as the specialties. As no man can be expert in all kinds of work, such a fifth year would, I suppose, have to be largely elective and so arranged that the future surgeon could omit some of the more complicated work connected with general medicine and could select some of the special surgical work without having to take all of it. One who wished to practice a specialty on narrow lines would find in this course such practical

work in general medicine as would be necessary to enable him to understand and recognize the connection between the diseases in his specialty and general conditions. At present the specialist must qualify himself in this respect by a few years of general practice or he must make up for his deficiency by frequent consultations with those who are qualified. But there is now no way of compelling even these makeshift compensations.

With students prepared by a fifth year of specialized study, hospital internship could be developed so that the graduate might select the kind of hospital for his purpose, or the surgical or medical or special hospital services could be developed to give the interne more practical work than at present, including operating under the guidance of the attending surgeons. This should be made a part of the training that entitles him to procure a license to do certain work. The certificate or diploma from a hospital should mean more than it does now.

Operative work on the cadaver should, I think, be taught to the undergraduate, for it would prepare him for operative work while serving an internship or assistantship.

Whether operative and experimental work on the living animal should be undergraduate and of limited character, or whether it should be post-graduate and extensive in its scope, and with special recognition, I will not attempt to discuss.

The courses in post-graduate schools might be lengthened and developed to give the students a specified amount of clinical diagnosis and operative work in minor surgery and in some of the specialties, and thus be made to count in the procuring of licenses, instead of being used, as at present, to fool the public.

To what extent the fifth year, the post-graduate courses and the special and general operative courses on the cadaver and on living animals could be made to take the place of a hospital internship or vice versa would be a subject for adjustment. The fifth year might be made up entirely of optional work, or be optional as a whole to those who could acquire an equivalent training in a hospital or elsewhere. The end in view would be for the college to give the young graduate a definite kind and amount of training or experience, and for the state to license him to do only what he has actually done, or learned how to do. The public who trusts him and pays him has a right to do this.

The conservative doctor will say that all of this is too complicated to be carried out and that such restrictions are out of place

in a free country. But I would remind him that the present restrictions that prevent men from practicing with the preparation and qualifications of fifty years ago would have seemed just as impracticable then as what I propose seems to him now. Something of the kind must come, and it should not be fifty years in coming. Fifty years ago people knew that the young medical graduate didn't know much in a practical way, and didn't allow him to hurt them; today the young men are supposed to be more modern and up-to-date than the professors who teach them. But if the public knew of the present faults of omission as well as of commission in the practice of the incipient surgeon, it would become panicky and would insist upon some such development for its own protection. The prevalence of paying commissions, of fee-splitting, of the recommendation of incompetent friends, of taking full charge of cases by those unprepared to do so would to a great extent disappear under a proper organization of our instruction and systemization of our practice. If we can bring about such an improvement before the people demand it, and before they appoint a commission to regulate us as they regulate the railroads and the trusts, we will be doing justice to ourselves as well as our patients, rather than be giving our legislators an opportunity of doing us injustice. It is better for us to regulate ourselves and do it right, than for our law makers to do it and do it wrong.

In conclusion let me again state that I am not trying to fix values nor suggest specific remedies, but have discussed established facts with reference to revealing tendencies and indicating the nature of needed reforms.

PEOPLES' GAS BUILDING.

A STUDY OF CERTAIN ASPECTS OF COMPARATIVE ANATOMY ILLUMINATING THE ARCHITECTURE AND PHYSIOLOGY OF THE HUMAN PELVIS.

By W. H. ALLPORT.

Considered as a factor in vertebrate phylogeny the pelvis is in unstable equilibrium, developing in some parts, degenerating in others, in response to the various physiologic stimuli resulting from environment. Though the isolated human pelvis may seem a rigid and completed structure, it becomes at once evident when we study it as one member in the vertebrate series that the flux of necessity is alone required to soften its outlines and render it again plastic enough to be molded into any form adapting it better to make the struggle for existence. To the close observer this mutability is indeed quite as demonstrable of the species as it is of the phylum, and of the human pelvis as of that of any other vertebrate, for individual variation is an essential to all biologic progress, and even between the different races of man there occur certain minor yet purposeful variations from the so-called normal type of human pelvic architecture. The constant difference due to special sex activity between the male and female pelvis of all primates are matters of rudimentary knowledge.¹

As compared with the pelvis of lower mammals the lightness and smoothness of the human pelvis, as well as its strength and economy of construction and graceful curves, bear indubitable testimony to its highly specialized functions, and to the fact that its owner represents, for the present, the ultimate product of the evolution of his phylum. Phylogenetically the human pelvis is as far above that of other mammals as are these in turn above the crude and massive pelvic girdles of the mammals of paleontology.

These changes and refinements in the human pelvis are primarily

1. For example: The increased roundness and roominess of the pelvis of the female *Simia Satyrus* (chimpanzee) (see Fig. 1) over that of the male of the same species is apparent even without measurements. The lower pelvis of the female gorilla (see Fig. 2) is shorter and less tubular than that of the male (see Fig. 3).

Pelvic mutability in response to physiological requirement reaches its climax in the pelvis of those grotesque mammals, the bat and the sloth, which spend a great part of their lives hanging by all fours, back downwards, from branches. The pelvis of the sloth looks in profile like an inverted quadrant pivoted on a curiously drawn out and pointed symphysis from which hangs the thinned and hollowed dorsal pelvis. The dependent part is converted into a great scoop by complete ossification of the sacrosciatic ligaments. In this basket-shaped structure are carried the better part of the animal's inverted viscera. (See Fig. 4.)

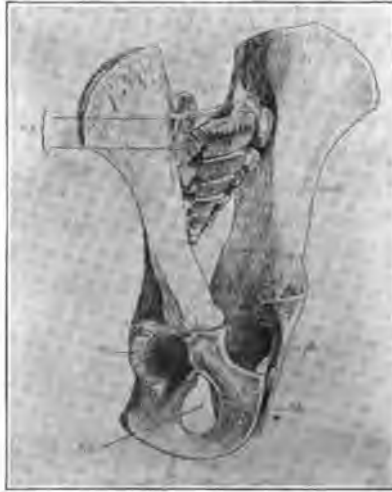


Fig. 1.—Pelvis of two-year old female chimpanzee. (After Wiedersheim.) For lateral profile, see Fig. 9.



Fig. 2.—Pelvis of adult female gorilla; to show pelvic inlet. Note expanded and outflanged ischial tuberosities. Note that as compared with the male pelvis, this pelvic cavity is more globular in shape. (From a Field museum specimen.)

incidental to the erect posture and gait, to the weight and work of the human individual, and to the obstetric habits of the species.

Compared with the elongated and irregular pelvic cylinder of other mammals the human pelvis is elegantly spheroidal or elliptical, and is built up from superimposed segments of two unequal spheres. (See Figs. 5, 6, and 7.)

The spherical contours of the human pelvis are without doubt chiefly responsive to the pressure stimuli of the gravid uterus and of the globular foetal head. This sphericity is secured by a notable hollowing out of the sacrum and iliac wings, not evident even in the



Fig. 3.—Pelvis of adult male gorilla. Note the elongated and tubular shape of the true pelvis as compared with that of the female of the same species. (From a Field museum specimen.)

flat and elongated pelves of the gorilla, orang, and chimpanzee. Even the lower primates lack the sacral promontory; the dorso-lumbo-sacro-coccygeal spine is nearly a straight line²; and the pelvis is a tube or cylinder and not a spheroid. The orang pelvis is singularly human and more spherical than that of any other monkey; yet, as in all other

2. Or rather, a gently bent bow with the concavity forward. (See Figs. 8 and 9.) In addition, the spine is inclined forward—*always*. No other primate walks erect with the erectness of man.

monkeys, the sacrum is straight and insignificant (See Fig. 1), the symphysis long and flattened (See Fig. 3), the pelvic axis straight (See Fig. 8), and the entire pelvis flattened anteroposteriorly (See Fig. 9). This flattening, however, is not at the expense of the anteroposterior inlet diameter, which is relatively much greater than that of man,³ but is secured by pushing the symphysis postaxially, thus bringing the plane of the pelvic inlet nearly in line with the body axis and approximating the symphysis and the coccyx. (See Fig. 9.)

The tendency toward sphericity in the human pelvis is also evident at the outlet, which is partly closed by the incurved coccyx and



Fig. 4.—Pelvis of two-toed sloth, *Choloepus didactylus*. (From a Field museum specimen.)

ischial spines and tuberosities. In other primates the coccyx is straight and the ischial tuberosities broad, outflanged, and protuberant. (See Figs. 10 and 11.)

The generous and graceful rounding of the human upper pelvis into the segment of a larger sphere is due to the stimulus of the perpendicular pressure of the abdominal viscera. Even in the orang, gorilla, and chimpanzee the "slanting" posture renders it impossible for the iliac alae to support the viscera (See Fig. 12, also Figs. 8 and 9); hence these wings are not basin-shaped and produced ventrally to include more than half the upper pelvic circumference as in man,

3. In the male gorilla the conjugate diameter at the inlet is to the transverse as 16 to 10, in the female as 14 to 10; in the chimpanzee as 20 to 10. The inlet and outlet diameters of most mammals are nearly equal.

but are flattened dorsoventrally and produced preaxially along the spines, facing directly ventrally like the blades of a pair of spoon oars. The extent of this difference between man and his nearest neighbor is shown by the fact that even in the upper apes (gorilla) a line connecting the anterior superior iliac spines nearly cuts the bodies of the



a



b

Figs. 5a and 5b.

- a. Human pelvic inlet.
b. Human pelvic outlet.
Sex characteristics atypical.

lumbar vertebrae. (See Figs. 8, 9, 10, and 11.) The iliac wings of mammals other than man serve merely as points for muscular origin, and not for visceral support.

As compared with the human pelvis, that of all other primates is noticeably elongated, and as straight and rigid as an old-fashioned



a



b

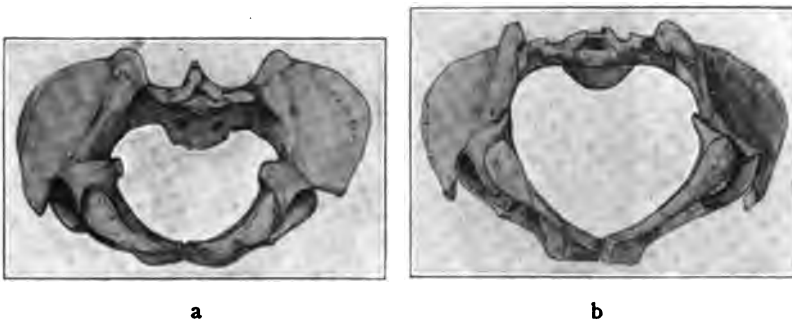
Figs. 6a and 6b.

- a. Typical male human pelvic inlet.
b. Typical female human pelvic inlet.

corset. In the gorilla the enormously long inflexible lines which run parallel to the spine from the ischial tuberosities to the iliac crests give to the pelvis, even when separated from the rest of the skeleton, a singularly ferocious and sinister appearance, like that of a distorted human being. (See Figs. 1, 3, 8 and 9.) This lengthening of the

dorsal part of the pelvis is due to postaxial extension of the ischial tuberosities, production of the iliac part of the iliopectineal line, and preaxial development of the iliac crests. The purpose of all these pelvic extensions is obvious when we consider the muscular attachments necessary to develop the tremendous leaping power residing in the posterior limb of the lower primate. Maximum projection of the ischial and iliac "posts" is attained in the kangaroo, in which they are developed coincidentally with the great leaping muscles of the thigh and buttock.

The body weight, the support of which the four-footed animal divides between the shoulder and pelvic girdles, is concentrated in man upon the structures grouped about the pelvis, and especially about the sacrum, acetabula, and ischial tuberosities. Concentration of per-



Figs. 7a and 7b

- a. The outlet male human pelvis.
b. The outlet female human pelvis.
Sex characteristics well defined in both.

pendicularly imposed load on the sacrum and dorsal half of the human innominate bones results (a) in *axial compression* and *shortening*, and (b) in *reinforcement* of the dorsal parts of the pelvis, especially in the lines of resistance to axial pressure and strain. With the development of the tendency toward upright progression occurs inevitably a development of the sacrum and dorsal pelvis at the expense of the pubis and ventral pelvis. In the avian pelvis (See Fig. 13) the anterior arch has vanished; and even in the lower primate as compared with man, the sacrum is stunted and insignificant and the ischiopubic pelvis of heavier construction.

The drawings and experiments of P. Lesshaft⁴ illustrate admir-

4. Merkel & Bonnet, *Anat. Hefte*, Erste Abth., June 15, 1894, pp. 173-227.

ably the development of resistance lines in the dorsal human pelvis at points where the perpendicular load is greatest. (See Fig. 14.)

In the Army Medical Museum at Washington is an instructive series of sections of the os innominatum by Dr. E. R. Hodge. The sections are cut in perpendicular planes at right angles to a dorso-ventral line, with the bone fastened in the normally erect position. These sections demonstrate more perfectly than is possible by examination of the unsectioned bone the following anatomic points, all of which have their basis in pelvic mechanics:

(a) Maximum strength lies in a plane just behind the middle of the



Fig. 8.—Spine and pelvis of adult male gorilla. Note inclination of spine and absence of secondary curves characteristic of man. (From a Field museum specimen.)

acetabulum, through the anterior part of the auricular surface and through the sacral promontory.

(b) Dorsal to this plane the internal structure of the bone becomes rapidly lighter and more spongy, held together by a mere shell of hard bone—the section shows plainly that the line of greatest superimposed strain lies elsewhere.

(c) The weakest portion of the pelvis lies ventral to the acetabula. The intimate structure shown in the sections demonstrates the pubic arch to be a tension and not a pressure member.

(d) The economy of the material used in the construction of the acetabulum is well demonstrated; at its central part the cup is as thin as writing paper; along its anterior and inferior quadrants it is but poorly protected; the posterior and superior quadrants are of great strength, with buttresses running well up into and continuous with the ilio-pubic eminence and line. Just above the acetabulum the bone is at its strongest, not only in the density of the outer layer but in consequence of the arrangement of pressure lines within the cancellous tissue.



Fig. 9.—Skeleton of young chimpanzee in profile. Note enormous axial prolongation of pelvis with anteroposterior flattening. Also forward inclination of spine. (From a Field museum specimen.)

(e) The sections reveal an arrangement of circular arches and radiating buttresses within the cancellous portions of this bone quite as significant as that seen in the upper portion of the femur. For example: Radiating resistance lines *diverge* downward from the auricular surface to be distributed along the dense iliopectineal crest which passes through the entire thickness of the bone to the base of the gluteal fossa. Below the crest the bone again becomes cancellous, and the radiating lines *converge* into the hard posterior and superior quadrants of the acetabulum. Intersecting the radiating lines

are many circular arches well calculated to give elasticity in combination with resistance to lateral thrust.

(f) In the internal structure of the ischial tuberosity this adjustment of resistance lines is especially noticeable; the hard outer layer is extremely thin, but the closely intersecting layers of radiating and circular laminae are almost geometrically perfect and by their arrangement add greatly to the strength of the bone.

Such lines are built directly upward and inward into an arch extending from the ischial tuberosity and heavily buttressed acetabulum, through the massive iliac body and sacral lateral mass to a central although somewhat inverted keystone in the broad angular sacral promontory. Great bony strength is reinforced by massive sacroiliac, sacrospinous, and acetabular ligaments, which, by introducing an element of elasticity, increase still more the ability of this posterior pelvic arch to resist forces applied in the direct line of the body axis.



Fig. 10.—Pelvic outlet of the male gorilla. Note the lack of sacral promontory and pelvic curve; also the wide open outlet. Note the enormous ischial tuberosities; the "seating apparatus" of the ape extends as far forward as the pubic symphysis. (From a Field museum specimen.)

To provide for strength in the sitting posture, in which the human individual habitually spends a certain portion of his life, the posterior arch is provided with strongly developed postaxial ligamentous sacrospinous extensions into the ischial spines and tuberosities, into which the downward pressure is distributed when the individual is seated. These ligaments are not peculiar to man, and in some animals increase of pressure has led to their complete ossification. (See Fig. 4.)

Fracture of the human pelvis through any of these dorsal lines is comparatively rare and requires force which is both massive and concentrated. The experiments of Lesshaft demonstrate the astounding fact that the axial planes of the dorsal arch of the average adult

human pelvis are able to sustain without fracture or dislocation an average perpendicular load of 2,759 pounds.⁵

Coincidentally with shortening of the human pelvic axis by compression, occurs both *lateral and conjugate expansion*; in the former direction as incidental to better and broader support during upright locomotion, in both directions as an obstetric necessity.



Fig. 11.—Adult female gorilla from behind and below to show the pelvic outlet. Note the short straight sacrum, the broad elongated ischial tuberosities, the lateral sweep of the iliac wings, and the expansive pelvic outlet. (From a group in the Field museum.)

As a secondary necessity incidental to the upright posture, occurs flattening and thinning of the human iliac wings for the support

5. Minimum load sustained before fracture 1,100 pounds; maximum 5,144 pounds.

of the abdominal viscera and the gravid uterus, and in all the higher primates for the attachment of the muscles necessary to maintain balance in the upright position. Expansion of these wings is secured, however, at the expense of their strength. Fracture of the expanded alar surface of the human ilium is an easy and every day occurrence, where it would be dynamically impossible in the ox (See Fig. 15), and difficult even in the lower primates. These differences in the comparative architecture of the ilium are well shown in the accompanying photograph of the pelvis of the bison (See Fig. 16).⁶ The alar por-



Fig. 12.—Group of male (upper figure) and female (lower figure) gorillas. (From Field museum specimens.)

tion of the haunch bone of the ungulates is a huge thick buttress projecting upward like a post; its unshapely mass gives no hint that it is the homologue of the light and graceful alar expansion of the human ilium. In most mammals except man and the highest apes, and even in the lower primates, the thick and undifferentiated dorsal part of the haunch bone tells the story of quadrupedality.

6. See also Wiedersheim, *Structure of Man*, p. 75.

A similar process of horizontal expansion with perpendicular compression takes place also in the ventral pubic two-fifths of the human pelvis in response to changed position and physiology. But whilst the changes in the dorsal pelvis just enumerated represent architecturally a distinct step upward, the changes about to be described are, with equal distinction, evidences of retrogression.



Fig. 13.—Pelves of black swan, (*chenopsis atratus*, Lath.) and duck, (*merganser Am.*). Note ankylosed pelvis and absence of complete pubic arch. Note rudimentary hip-joint of swan. (From a Field museum specimen.)

In man, with his shifted center of gravity, is not only the entire weight of the upper body transmitted as a compressing force to the thigh exclusively through the dorsal parts of the pelvis, with corresponding condensation and development of these parts, but the greater part of the function of support for the heavy viscera which is served

by the ischiopubic arch of most mammals' (See Fig. 17) is taken over by the human ilia and by the highly specialized abdominal muscles.

This transfer of function explains the shallowness and lightness of the human pubic arch, which fulfills but three functions, none demanding great pressure resistance or massing of material:

1. Closure of the pelvic outlet; a function hardly calling for bone, and which in animals below mammals is admirably served by membrane. In birds and other oviparae the secondary importance of the pubic bones is shown by the fact that the ventral pelvic arch is not completed by bone, but by tendon and membrane of considerable tensile resistance. Stability and strength for flight and walking are easily secured by elongating and consolidating the sacrum and by



Fig. 14.—Transverse section of adult male human pelvis in true perpendicular axis of body. (After Lesshaft.)

uniting the innominates fixedly by bone to the sacrum and spine. This occurs, except in that great runner the ostrich, without strengthening the pelvic circumference by a pubic arch. (See Fig. 18.)

The peculiar waddling gait of many birds is due to the elongated and ossified pelvis, plus a hip joint in which the acetabulum is not only shallow and rudimentary but normally perforated (acetabular foramen). Those congenital dislocations of one or both hip joints occurring in some human individuals with little or no acetabular cups are without doubt reversions to the avian type.

7. In lower mammals the ischium is apt to join with the pubis in forming an *ischiopubic symphysis*, and even in other primates the pubic symphysis is longer than in man. In many mammals this articulation is of great length; for example, 7 inches in the adult elk, and in the buffalo, 9 inches.

The usual lack of a complete pubic arch in animals below the viviparous mammal leads to the probably correct conclusion that a primary design of the osseous closure of the pelvic circle in mammals is to support the gravid uterus. We must therefore include this duty as a part of that function of the mammalian pubic arch just enumerated. In the erect human pelvis, however, the gravid uterus receives, as the result of a secondary pelvic development peculiar to man, a more generous support from the iliac wings and the iliopubic eminences. Again, therefore, the lightness and weakness of the symphysis and anterior two-fifths of the pelvic circle in the human species when compared with that of other mammals. In lower mammals the massive symphysis is much elongated and the ischia take part in the articulation; the hollowed-out ischiopubic arch of many quadrupeds furnishes



Fig. 15.—Pelvis of adult ox from below (ventral aspect). (After McFadyean.)

the greatest part of the support for the gravid uterus and for the filled rectum.⁸

2. Adjustment and restraint during locomotion and parturition, and a postaxial attachment for the abdominal muscles. These duties call for tensile strength such as is usually found in tendon rather than in bone.

We cannot ignore the important fact that without the support of the normal anterior arch the human gait becomes at once extremely difficult and awkward—a waddle strongly suggestive of the avian type of progression. That the maintenance of this arch is essential to

8. Parturition is favored in some mammals (cat, sheep, dog, pig, etc.) by looseness and flexibility of the symphyseal joint. This fact is commended to the notice of obstetricians who contend that the symphysis of the parturient woman never opens.

comfortable human progression becomes obvious to any obstetrician who has encountered cases where separation of the pubic symphysis has occurred during parturition. Such patients when attempting to walk for the first time after confinement discover that the hips "spread" with each step, and become painfully conscious of the sacro-iliac and pubic articulations. Pain is developed, especially when changing from one foot to another and is localized at the pubes. The patient is made aware each time the body weight is thrown from hip to hip that the anterior arch is "sprung," and that the posterior arch "settles." The same phenomenon occurs in cases of ununited fracture of the pubic arch.

These occurrences more than any others in pelvic pathology bring close to us the fact that the human pelvis is not an osseous unit, but



Fig. 16.—Pelvis of buffalo. Axis somewhat tilted as though animal had "reared up" into semi-erect position. (From a Field museum specimen.)

a series of units held together with ligaments at elastic joints by a nice adjustment of opposing, but normally well-balanced forces, brought together under the well-known mechanical principles of the arch. Closely associated with, and in fact inseparable from function 2 of the ventral arch is, therefore, function.

3. Tensile support for the bases of the dorsal arch. The lateral thrust of the elliptical sacro-iliac arch is restrained, and its greatest strength developed, through being held tonically in a state of tension by the rigid chord or bowstring represented by the shallow pubic arch. In addition the tension of the pubes is reinforced by the tonic contraction of the sacrosciatic ligaments. The use by nature of the principle of a supporting superior arch of heavy material with an inferior restraining chord of light weight but great tensile strength is not unique in this locality. The same architectural device is em-

ployed in the arch of the foot, and, with somewhat modified form and meaning, in the ventral thorax.

As the result of a series of experiments which might almost be suspected of having been undertaken to establish an "argument from design," in certain details of pelvic architectonics, Lesshaft contends that all sections of the upper and dorsal part of the true pelvis of man are quite regularly elliptical, and that this portion can be demonstrated to have the shape and all the mechanical strength of a well constructed dome. If a line drawn to connect the centers of the acetabula is bisected, the center of the line becomes the central point of the pelvic dome. From this point any horizontal radius to a circumference drawn through points of maximum bony strength averages 8.5 cm. Other radii erected in series from the central point gradually but symmetrically increase in length until one radius—averaging 9.6 cm.—becomes perpendicular to the horizontal plane and passes through the midpoint of the body of the first sacral vertebra. If a section in the true perpendicular plane of the body is cut through the center of the acetabula it will also cut the central bony point of the promontory; a curved line drawn through the densest



Fig. 17.—Buffalo pelvis; from below to show ischio-pubic symphysis (ventral aspect). (From a Field museum specimen.)

bone lying between these points will demonstrate the elliptical construction of this part of the pelvis. A close study of the intimate structure of the bone in this vicinity demonstrates resistance planes similar to those found in the upper part of the femur. Lesshaft's diagrams also illustrate the character of the anterior or inferior arch, which strongly resembles the inverted truss frequently employed in bridge construction.

Two of Lesshaft's profiles are herewith reproduced. Fig. 19a and Fig. 19 b. (See also Fig. 14.)

From the foregoing the deduction is plain that the human pelvic arches serve different purposes; the primary function of the dorsal arch is resistance to pressure, that of the ventral arch resistance to tension. Since force acting as traumatism is usually manifested in terms of pressure rather than of tension, this also makes it clear why, in 90 per cent of pelvic accidents, the pubic arch, whose greatest strength lies in tensile resistance, is the sufferer.

When compared with the pelves of lower mammals the human posterior arch shows a remarkable development both in function and architecture. The anterior arch shows an equally distinct retrogression, not only in function but, as an anatomic corollary, in the quantity and strength of the material entering into its construction; mass and density have been sacrificed to tensile strength.

The foregoing study leads inevitably to the conclusion that function dictates to anatomy.



Fig. 18.—Pelvis of African ostrich, *struthio camelus*. Note pubic symphysis and open acetabulum. (From a Field museum specimen.)

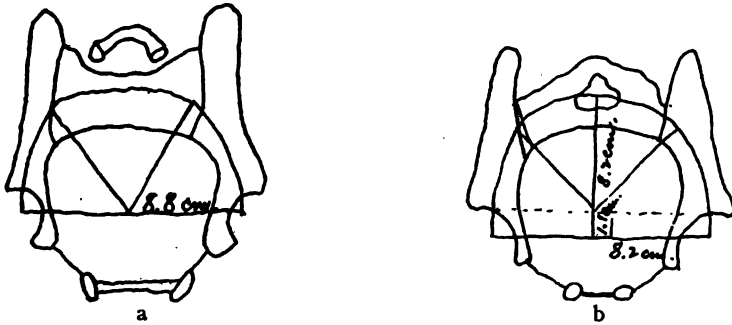
Phylogenetically the tendinous belly wall of the oviiparous bird becomes the massive ischiopubic uterine support of the viviparous mammalian quadruped; this in turn, in the one completely erect primate, shrinks again into secondary importance as the pubic structure becomes merely an ossified chord or "tension member" inserted to restrain the lateral thrust of the sacro-iliac arch.

The thick and shapeless haunch bone of the Ungulates becomes the light and gracefully expanded iliac wings of man.

The thin elongated sacral wedge of the quadruped becomes the

broad basal support of the human spinal column, and hangs in turn as the inverted keystone of an arch perpendicularly upon the heavily buttressed ilium and acetabulum.

The sharp and projecting ischium, to which attach the thicker



Figs. 19a and 19b.

a. Tracing of perpendicular section of human pelvis a little behind middle of acetabula. Through dorsal arch of the 5th lumbar vertebra, body and lateral mass of first section, sacro-iliac articulation, obturator membrane, ischiopubic ramus, and triangular ligament. Note that the section of the arch is a circle.

b. Tracing of section made at an angle of 40 degrees from perpendicular through dorsal arch and body and lateral mass of 1st sacral, cutting sacrum 2.4 cm. below promontory, showing strongest portion of ilium above, the iliopectineal eminence. The section cuts the obturator membrane, the posterior pubic rami and the ligament of Henle. Note that the section of the arch is an ellipse.

and more important rump muscles of lower mammals, is shortened and inverted to close the human pelvis, and provides the primate when seated with secondary points of support for the sacro-iliac arch.

607 RUSH STREET.

PROPHYLAXIS OF VENEREAL DISEASES IN THE ARMY AND NAVY.*

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Since the elimination of malarial affections as a result of the brilliant discoveries of Laveran, Ross and other investigators, our vital statistics have shown no factor which has contributed more to the non-efficiency of the army and navy than venereal diseases.

The marked increase in this morbidity since 1901 has attracted the attention of military and naval hygienists of our services to the subject generally, a number of whom have ascribed the increased incidence to the abolishment of the canteen from the post exchange, which occurred during that year. I do not believe, however, that the removal of the canteen had anything to do with the increase of venereal diseases in the army.

There seems to be little doubt but that diseases of vice were quite as prevalent at many of the posts in the army before the Spanish War as since that period, although not susceptible to proof by statistics. Medical officers who served before 1898 understand generally that not more than 33 per cent of venereal cases were made of record during that period. It will be remembered also that venereal inspections were not instituted before 1898, nor were these diseases taken up "for record only" as is now the case.

Although inspections and venereal prophylaxis have occupied the attention of medical officers for more than a decade, this important branch of military hygiene never received official recognition from the War Department until the publication of General Orders 17, which was issued May 31, of the present year.

Notwithstanding the silence of the central authorities on the subject, regular physical inspections of men were begun as early as 1898 in the Seventh Army Corps and in 1899 among the regiments leaving San Francisco for the Philippines.

In 1901 General MacArthur, at the time Governor-General, issued General Orders 101, which required bi-weekly venereal inspections of the entire army in the Philippines. This was the first general order ever published on the subject in our service.

These examinations were made twice monthly and had the effect

*Read before the XV International Congress of Hygiene and Demography.

of doubling the venereal incidence in the islands. Similar inspections were made in the United States by home coming regiments, which naturally resulted in an apparent increase of venereal diseases among the troops in the United States also.

The study of the Great Red Plague has been the subject of frequent conventions, international as well as national, during the past generation, which have accomplished heretofore little beyond recommendations for educational campaigns and moral suasion.

March 18, 1902, the Secretary of War issued a circular to the army inviting attention to venereal disease and alcoholic addiction, which was introduced by the following remarks: "The only really efficient way in which to control diseases due to immorality is to diminish the vice, which is the cause of these diseases. Excessive indulgence in strong drink is absolutely certain to ruin any man physically and mentally, while diseases due to licentiousness produce effects which are quite as destructive and even more loathsome." Notwithstanding the publication of this highly moral encyclical the annual venereal rate increased in the army from that date until 1905 when it reached the highest figure on record.

Happily for the present generation the educated world has begun to realize that the three great social cankers, alcoholic addiction, prostitution and venereal diseases must be met by scientific and rational measures. Why attempt longer to conceal in the closets of social life, these ghastly skeletons, which for centuries have been gradually but surely gnawing their way to the very heart of human existence?

Venereal diseases are intimately associated with two of the most prominent sociological problems of the age, alcoholic addiction and prostitution, and assisted by the increasing immoral tendency will, if not checked, lead to a declining birth rate, degeneracy and possibly racial annihilation.

Alcohol plays such an important role in the contraction of venereal diseases that it is questionable whether more than 5 per cent of this morbidity occurs among the abstaining class. Investigators, who have studied the psychocological effects of alcohol on man, state that even in moderate quantities it lowers the moral standard, lessens self restraint and makes men less cautious. There is a general tendency for alcohol to injure and destroy the higher forms of cell life in the body, besides affecting the blood and other vital fluids.

Besides the effects of alcoholic beverages, even in limited quantities, arouses in men the desire for sexual indulgence and association with the demi-monde. It can be safely said that every prostitute, pro-

fessional or otherwise, in some period of her career contracts either syphilis or gonorrhea and hence becomes a menace to her clientele.

The educated world is rapidly drifting to a high plane of rationalism in the discussion of these great problems and beginning to discard maudlin sentiment and prudishness, which heretofore have stood as barriers to intelligent action and common sense.

The time has arrived to meet these questions fairly and squarely and without evasion. They must be recognized as a part of the great social fabric, which cannot be downed through moral suasion and educational campaigns alone. Legislators, health officials and authorities generally, should be held as responsible for the ravages of venereal diseases in a community as for that of cholera, smallpox or any other malignant and infectious disease which can be prevented by scientific measures.

In combatting the great venereal plague prostitution should be recognized and subjected to state and municipal laws. The widespread condition of vice diseases in civil life and their degenerating effects on the nation demand the most drastic measures for the control, both of the drinking habit and prostitution.

In order to accomplish these reforms no candidate for state or municipal office should be endorsed by the medical profession and the educated public, who had not satisfactorily defined his platform on the control of the three great social evils. A clean and healthy nation should become the war cry of the present generation.

Laws should be enacted in every state, city, town, village and district throughout the land for the registration, inspection and segregation of the demi-monde. There should be a Yoshiwara in every city, as well as a lock hospital for its diseased inmates. These regulations if properly enforced would in a large measure solve the venereal problem.

The experience gained in Jolo during the early days of the Philippine insurrection, demonstrated the wisdom of this procedure. At that time Jolo was under the military control and the public women were examined weekly and segregated. Those found diseased were at once transferred to a lock hospital and retained until they were cured or the infectious stage had passed.

The results were most gratifying among the troops inasmuch as they were practically kept free from these loathsome diseases during the regime, which lasted several years. The men were also regularly examined and kept under quarantine during the infectious stage.

A very satisfactory system was also inaugurated in Manila dur-

ing the early days of American occupancy and I believe with slight modification is still in force. The public women were required to keep a small examination book with photograph and to submit to a weekly examination. Those found diseased were sent to San Lazaro Hospital, which had been especially organized for the courtesan class. The hospital with a capacity of 300 beds, was practically filled during that period. There were about 1,500 public women in Manila at that time, 25 per cent of whom were constantly suffering from the infectious stage.

All women engaged in the trade of prostitution should be subjected to weekly examinations and required to present themselves to the official examining physician at the prescribed time under a penalty of fine or confinement for non-compliance. Women physicians could be employed as examiners if the public policy demanded it. The examinations should be made with the greatest care and none countenanced unless made with the speculum and microscope.

Any woman engaged in illicit traffic as a trade or profession and found suffering from an infectious venereal disease should be confined in a lock hospital until she had recovered from the infectious stage.

Laws should be passed making the spread of venereal diseases a criminal offense and allow damages to the injured party in case of legal proof. The penalty should be either fine or imprisonment.

Health boards and public educators should not only educate the masses on the injurious effects of alcoholic addiction and diseases of vice, but carry this valuable instruction into every public and private school in the land for the benefit of the youth of both sexes.

I know of no period in the history of our country when a general moral reform was more greatly needed. The purity of our young men and women is menaced by the vicious tendencies of the age, which are destroying public health and morals.

The increase of tippling and cigarette smoking is marked among the women of the wealthy and privileged classes, while their less favored sisters haunt with pernicious frequency places of amusement, which pander to the basest human passions, and chase with utter abandon the voluptuous step of the grizzly bear, bunny hug and turkey trot.

In the interests of health and morality dance halls with liquor attachments, restaurants where women resort to drink with men, hotels where young girls are lured to their destruction, music halls that are purveyors of lewdness, and assignation houses should be obliterated from every community.

Bar rooms and beer halls should be deprived of the social features, which make drinking attractive and dangerous. Music, chairs, tables and private stalls should be removed and the accommodations limited to the bar and standing room alone. The treating habit should also be prohibited.

Linked with the general campaign against moral degeneracy and venereal diseases should be laws regulating marriages. No one should be permitted to marry unless recommended by a state board of medical examiners. They should be pronounced free from all morbid and mental conditions which affect heredity. Tuberculosis and constitutional dyscrasias, uncured syphilitics, alcoholic and other narcotic addicts, paranoia, and allied mental affections, and degeneracy should be disqualifying causes. In order to protect the race sterilization should be performed on all male criminals sentenced to prison for murder, robbery, rape, arson and other crimes of degeneracy.

Our recruiting system is largely responsible for the prevalence of venereal diseases in the army. Instead of securing recruits from the small towns, villages and country districts, they are principally drawn from undesirable sections of the large cities. Many of our recruiting stations are located in slum districts and the vicinity of low bar rooms and saloons, from which they draw a degenerate overflow.

Besides recruiting parties, too frequently, are made up of drinking men, who are unable to morally discriminate and do not hesitate to recommend applicants to the recruiting officer, who have been sobered up for the occasion.

Major Deane C. Howard, Medical Corps, on duty at Jefferson Barracks, R. Depot, states that 50 per cent of the venereal cases treated at that depot were from infections contracted prior to enlistment. (Military Surgeon, December, 1911.)

Venereal campaigns in armies and navies should be conducted mainly on lines of weekly inspections and enforced prophylaxis. An exception should be made in the case of married men living with their families and certain non-commissioned officers and high class privates, who could be trusted with the voluntary use of prophylactic tubes of known efficiency.

Hygienic and moral lectures should be added to the venereal campaign, partly for the purpose of educating the men in sanitation, army and navy diseases, and the ill effects of vicious habits, and partly to elevate their moral standards. The reduction of pay while on sick report from alcoholism and diseases of vice, which has recently become a law, will, no doubt, become a potent factor in their prevention.

The moral, educating and Christianizing influences of the Young Men's Christian Association has great weight in the crusade against alcoholic addiction and venereal diseases in military and naval life, and their establishment should be encouraged at every army post and naval station. Besides their secretaries are usually interested in athletics, which stimulate morality and temperance.

The club features of the post exchange if properly developed, contribute largely to the venereal campaign through its entertaining and restraining influences. A pleasant and home-like club for the men, with facilities for the entertainment of their families and friends would anchor many of the young men, who otherwise would seek the excitement of saloon and brothel life on the outside.

The moral influence of fraternity clubs might be put to excellent service in combatting venereal diseases and alcoholic addiction in our sister services. I would therefore recommend the organization of a military society for the army and navy, designated the National Guardians of Honor.

Its tenets should embrace patriotism, good citizenship, morality, temperance, physical development and good fellowship. Organized on military lines, its control should be vested in a commander, vice-commander, adjutant, secretary-treasurer, and council. The government should provide suitable rooms for its meetings and the necessary furniture, heating and lighting.

An honorarium of \$100 should be paid every member at expiration of service, who had observed total abstinence throughout his term of enlistment. Soldiers are given extra pay for marksmanship and I know of no factor which promotes greater efficiency in an army than total abstinence.

Since the War Department has officially recognized and enforced venereal inspections and prophylaxis, there is no longer reason for cloaking inspections of this class of disease under the guise of physical examinations. They should be conducted weekly instead of semi-monthly, and for obvious reasons before the men had access to the urinal or toilet.

In my opinion they should also be conducted by an instructed non-commissioned officer of the company in the presence of the company or detachment commander. This system was in vogue in the Central Division during the fiscal year ending June, 1912, and proved very satisfactory.

Non-commissioned officers on duty at recruiting stations become very expert in the detection of diseases and physical blemishes, and I

know of no good reason why they should not be utilized as company venereal inspectors. This would relieve medical officers from a routine duty which consumes at present unnecessarily much of their valuable time.

It is not necessary to remove more than the blouse and open the trousers and drawers to make the ordinary venereal inspection. Venereal inspections should not be confounded with physical examinations, which require complete stripping in order to prove satisfactory.

In 1906 Major H. I. Raymond of the Medical Corps now Lieutenant-Colonel, succeeded in introducing the German method of prophylaxis at Columbus Barracks, a recruiting depot notorious for venereal prevalency. The system consisted of a package containing a box of blue ointment, small vial of 20 per cent Argyrol solution and an ordinary eye dropper in lieu of a syringe.

This became known as the K packet and its use was voluntary. In a report to the chief surgeon six months after trial he was forced to admit that the experiment had affected the venereal incidence of the post but slightly. He attributed its failure to the difficulty of its application, its bulkiness and unpopularity among the men for many personal reasons.

In spite of the failure of the K packet at Columbus Barracks, the system was established in army posts generally, where it languished and became obsolete in a few years through lack of co-operation, both on the part of the medical officers and the men.

In the meanwhile naval surgeons introduced aboard ship a dispensary system of disinfection, which has practically become the basis of the system recently established in the United States Army. The routine practice of the navy with slight modifications consisted of:

1. A wash of 1-5000 HgCl_2 for penis.
2. 20% argyrol or 2% protargol for urethra.
3. 25%-35% HgCl ointment for the penis.

The naval disinfectant system has been used for years with excellent results in spite of the fact that Post and Nicholl declare argyrol and protargol practically worthless as gonocococides.

Passed Assistant Surgeon N. J. Zalisky, U. S. N., employed this system aboard ship with most gratifying results. He states as a result of careful examinations and disinfection 500 men were protected from venereal diseases for five months without a case of infection. He used 1-1000 bichloride wash, 2% protargol solution and 30% calomel ointment. He found that $\frac{1}{2}\%$ protargol solution caused urethral distress and 2% a urethritis. (U. S. Naval Bulletin, January, 1912.)

Surgeon R. E. Ledbetter, U. S. N., was also very successful in the treatment of the men under his charge at Cavite, P. I., with this method. He used 1-2000 bichloride, 10% argyrol and 33% calomel ointment, and reduced venereal diseases from 30% annually to about 11%. (Journal A. M. A., April 15, 1911.)

Majors Deane C. Howard and C. F. Morse, Medical Corps, U. S. A., at Jefferson Barracks, Mo., and Schofield Barracks, H. T., report phenomenally excellent results with the employment of the disinfectant system. Major Howard used 1,5000 bichloride, 20% argyrol and 20% calomel ointment. Major Morse used 1-3000 bichloride, 1-5000 permanganate and 35% calomel ointment. (Military Surgeon, Dec., 1911 and Sept., 1910.)

The same method with slight modifications has been largely used by other army and naval medical officers with excellent results, though a number of them report failures with men who received disinfection 10 hours after exposure. Major Morse reports two failures with gonorrheal infection, one 6 hours after contact, the other 4½ hours after. Other medical officers report 8 hours as extreme safe period before disinfection.

Besides the enforced dispensary system a voluntary toilet method has also been used in both army and navy. The precautions and disinfectants used in the toilet system were practically the same as employed in the dispensary method. The results of this system have been unsatisfactory partly because its application was too complicated for the class of men among whom such diseases usually occur, and partly because it was not compulsory.

Early in the spring of 1910 the author began a series of experiments with a view of improvising an effective pocket method in place of the bulky-K packet, which was too complicated for ordinary use and too cumbersome for the pocket.

In conducting these experiments ordinary 4 c.c. collapsible nasal tubes were used for containers. Metchnikoff had proven that 33% HgCl ointment would protect against syphilitic infection and it was therefore decided to use this ointment as a base for the proposed single method protection.

A number of different animal, vegetable and mineral fats were utilized with calomel before a suitable solvent was found. Among them may be mentioned vaseline, cocoanut butter, olive oil, mutton and beef suet, lard and lanoline. Since animal fat was found more absorbent on mucous membrane than mineral and vegetable fats the latter were discarded.

Sixteen men, who were secured as volunteers, were utilized in the experiments and divided into groups of two. Before inoculation scrapings from their urethras were examined microscopically to guard against existent infection, as well as the pus used in the experiments, to determine the presence of gonococci. The experiments which follow were made in the course of two months and results authenticated by the medical officers who conducted them.

The following table gives the formula of prophylaxis used in each experiment, time after inoculation before prophylaxis was introduced into the urethra, and results:

Group	Formula.	Time After	
		Inoculation.	Results.
1.	Argyrol, 20% ; calomel ointment, 33%	10 minutes	Successful
2.	Protargol, 5% ; calomel ointment, 33%	15 minutes	Successful
3.	Thymol, 5% ; calomel ointment, 33%	20 minutes	Successful
4.	Phenol, 3% ; calomel ointment, 33%	20 minutes	Successful

Group	Formula.	Time After	
		Inoculation.	Results.
5.	Hyc0, 2% ; calomel ointment, 33%	25 minutes	Successful
6.	Calomel ointment, 33%	25 minutes	Successful
7.	Calomel ointment, 25%	30 minutes	Successful
8.	Calomel ointment, 20%	30 minutes	Successful

Dr. Gustave M. Blech confirmed my experiments in a series of experiments carried on at Lincoln Hospital, Chicago, Ill., in the fall of 1910. Volunteer Greeks and Italians were utilized for the purpose and the same technique carried out in regard to urethral examinations and character of pus before inoculation. He used 25% calomel ointment in all his experiments with complete success, which demonstrated beyond doubt the safety of calomel as a prophylaxis against both syphilitic and gonorrheal infection. (*American Journal of Dermatology*, No. 8, 1911.)

Dr. Blech carried his experiments further by operating on a litter of four pups, two weeks old. Both eyes of each pup were well smeared with gonorrheal pus, after which the right eye of each animal was protected with the 25% calomel ointment and covered with absorbent cotton and bandage. Within three days the unprotected eye become violently inflamed, while the protected eye remained normal.

Several months after the conclusion of my experiments with calomel as a gonococcocide, a military tournament was held in Chicago, at which 1,200 regular troops were present. With the authority

and co-operation of the Department Commander I was enabled to introduce my system in the camp.

The troops were examined physically on arrival and record made of those diseases. They were then furnished the A. & N. protection, the name given the calomel tube for convenience and distinction and instructed in its use. At the conclusion of the tournament, two weeks later, another examination was made of the command at which no additional cases of venereal disease were discovered. The formula used during the Chicago tournament consisted of calomel 30% and benzoated lard 70%.

A similar experiment was conducted during the maneuver at Fort Benjamin Harrison, September, 1910. Physical inspections were made of the command on arrival and record made of infected cases. The A. & N. protection containing calomel 30% and benzoated lard 70% was furnished the men. An examination followed the maneuver, and it was found that 594 men with 1,301 exposures who had used the protection suffered no additional infection, while 302 men with 763 exposures, who had not employed the protection contracted 26 cases of gonorrhea, 12 cases of chancroids and 1 case of syphilis.

The A. & N. protection was officially employed in the Central Division the fiscal year ending June 30, 1911, at many of the posts with excellent results. The success of any form of venereal prophylaxis depends on the co-operation of both medical and company officers as well as the men themselves.

Surgeon Reginald B. Henry, U. S. Navy, calls attention to his success aboard the *Rainbow* with the single calomel method. Through the use of a 25% calomel solution he prevented infection among the crew of the *Rainbow* for six months, with a record of 567 exposures (Military Surgeon, May, 1912).

Surgeon Robert A. Bachmann, U. S. N., speaks very highly of the calomel tube method for gonorrheal prophylaxis. He used the old A. & N. protection formula, substituting trickresol 1% in place of phenol 3%. He states that nine men had intercourse with a public woman infected with gonorrhea and escaped infection through the protection of this method. The tube he employs is not as well adapted to the urethra as the A. & N. tube and besides is very much more expensive. (Military Surgeon, August, 1912).

Major F. F. Russell and Captain Henry J. Nichols, Medical Corps, United States Army, Army Medical Museum, instituted a series of "Experiments with the A. & N. tube to determine its effi-

ciency as a gonococcicide." In making these experiments they employed 34 men suffering from fresh attacks of gonorrhea.

Their technique was as follows: "Smears were made from the urethral discharge to establish the diagnosis; if the case was suitable the cultures were made on 2 to 4 tubes of ascitic fluid agar. The disinfectant was then applied to the urethra, where it was retained one or two minutes, when the excess was allowed to escape; the patient waited 10 to 15 minutes, then urinated, when fresh smears and cultures were made from fluid expressed into the meatus. The cultures were incubated 24 hours and suspicious colonies examined by a Gram stain."

They state, "that the original A. & N. packet we received were effective in 7 out of 8 cases," which I think is a most favorable showing when we consider the rigid test to which the method was subjected.

In the conclusions of their report they state that, "the original A. & N. packet is effective as a prophylactic, probably on account of its content of carbolic acid, which is brought into action by the camphor and lard. The successful A. & N. formula used by Major Russell and Captain Nicholls consisted of camphor 3%, phenol 3%, calomel 25%, lanoline 25% and rendered lard sufficient to make 100 parts. Since the inauguration of compulsory hospital or dispensary disinfection by the War Department the following details of the system have been furnished from the Surgeon General's Office: 1 name, rank and organization of soldier with day and hour of contact and day and hour of disinfection; 2, wash genital organs with soap and warm water; 3, inject into urethra 4 c.c. solution composed of protargol 2%, glycerine 15 parts, and water 85 parts, retain three minutes; 4, rub entire penis in calomel ointment, 30% and wrap in soft paper napkin.

The Surgeon-General authorizes the use of a 20% argyrol solution in case the protargol produces an irritating effect on urethra, and has recommended the sale of protective tubes in post exchanges containing the formula of the A. & N. as given above in Russell and Nicholl's experiments.

The above dispensary system has proven satisfactory in the navy in those cases where the disinfection has been administered from six to eight hours after exposure.

A combination of the dispensary method with the A. & N. prophylactic tube should prove ideal in those cases where the men remain absent more than five or six hours after sexual contact. Without disinfection or the use of prophylactic tubes within that period it is generally believed that less than 50% of the men will be protected.

FACTS OF MODERN SCIENCE AND THEIR VALUE IN THE PREVENTION AND CURE OF DISEASE.*

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Strange as it may appear, there are well established facts in modern science, which seem to be almost completely ignored not only in the estimation of food values and the manufacture and preparing of foods, but also in the prevention, alleviation and cure of disease. I have reference to the facts about the mineral constituents of food and of the human organism, and their functions in the processes of life.

In the middle of the last century a number of investigators of more than average ability, among them Justus V. Liebig, F. W. Beneke, Jakob Moleschott, Carl Voit, etc., recognized and emphasized the vital importance of the mineral salts in physiology and pathology of living organisms.

For the benefit of those who have no access to the writings of these methodical and profound thinkers, I take the liberty of quoting a few passages from their writings.

Liebig: "The indispensable agents of the organic processes are the incombustible constituents or the salts of the blood."

"If it be true that these substances take a conditioning and necessary part in the processes of transforming the constituents of food into constituents of the body, then it is self-evident that no food, in which these materials are lacking, can sustain life; that all foods in order to possess full nutritive value must contain these materials in the proportions favorable for the formation of blood, and that we can deprive food of its blood making power if we deprive it of these agents.

"In all processes in the animal organism, digestion, blood making, respiration and metabolism, the mineral** constituents, or the

*By courtesy of the *Medical Record*.

**In most publications the mineral elements and their combinations in the vegetable, animal and human organism are designated as the "inorganic" components of the system.

This entirely arbitrary, assumptious and misleading expression is contrary to the facts of science, and I have, therefore, taken the liberty of substituting "mineral" for "inorganic" in all of my translated quotations.

While it is true that at the present time chemistry is unable to distinguish between inorganic and organic forms of elements and their combinations, the time is not distant when this distinction will be clearly made and defined.

salts which are constant components of the blood, the muscles, the tissues and all of the organs, as well as of food, take a very essential, in many cases a directing part; only by their co-operation do the nutritive elements of the foods of man, and the fodder of animals, receive the faculty to serve for the sustaining of the organic processes, and therefore they ought to be taken into account in the explanation of these processes."

F. W. Beneke, a distinguished clinician and pathologist of Marburg, in his celebrated book, "*Grundlinien der Pathologie des Stoffwechsels*," writes:

"The mineral constituents, which through the food are supplied to the organism and enter into the composition of the body building material, up to a short time ago, have been so underrated in their importance and even at the present time are still so little taken into account, that one cannot forcefully enough draw attention to the fault which lies in this neglect."

Just as these constituents are of the most far-reaching importance for all formation and growth in the vegetable kingdom, so too for the animal organism they are partly the most necessary conditions of all growth, partly the most indispensable agents of the processes of life. Without the presence of phosphates and sulphates no proteins are formed in the vegetable kingdom, and in an unsuspected way the phosphates take part even in the dissolving of the plant proteins; without the presence of alkali carbonates no vegetable acids, no sugar, no amyllum are formed. In the animal organism, however, a large portion of the mineral constituents of the vegetable is utilized in the formation of the skeleton and the soft cellular structures, and another portion serves essentially as agents for all those processes which include the nutrition of the existing and the gradually retrograding metamorphosis of the introduced food constituents.

It is almost trivial to remark that the bony structure of man cannot be formed without the supply of a certain quantity of earthy phosphates, and still it often appears as though in medical practice this fact were never given any thought. Without potassium phosphate no blood corpuscle is formed, without the presence of alkaline bases the oxidation of vegetable acids in the organism is but partially accomplished, without the presence of sodium chloride the processes of diffusion in the body would be entirely different from what they really are; without phosphoric acid as highly important a combination as the glycerinophosphoric acid could not possibly be formed. But notwith-

standing the indubitable certainty concerning these things, they are but to a small extent taken into account in medical practice. Powerful agents, like iodine, arsenic, mercury, quinine, etc., are extensively used as remedies, but the fate of the organism so far as it depends upon the integrating mineral constituents is apparently left entirely to benevolent nature, without considering that she too, notwithstanding all her benevolence, through certain conditions is limited in her ability to act, and that oftentimes one can accomplish the most rational cure by eliminating those conditions, namely, in our case, *by endeavoring to* re-establish mineral equilibrium.*"

Jakob Moleschott in one of his books, entitled "Der Kreislauf des Lebens" (Circle of Life), says, as nearly as I am able to give it in English: "The fabric and the life sustaining powers of the organs are dependent upon the necessary quantity of the mineral constituents. Real bone is as impossible without calcium phosphate as gristle is without cartilage salts, blood without iron, or saliva without potassium chloride."

Much corroborative evidence might be quoted from other sources, and all that these men so ably expressed thirty and more years ago applies with equal force today, so far as personal observation and statements of contemporaneous authorities go.

Of the most recent and modern authors, Drs. Albu and Neuberg of the University of Berlin, in their highly commendable little book, "Physiologie und Pathologie des Mineralstoffwechsels," Berlin, 1906, write as follows:

"As little as scientific medicine at the present time acknowledges the importance which the salts deserve in the physiology of nutrition, just as little does it appreciate also the rôle which they play in the genesis and evolution of disturbances in nutrition and of anomalies in metabolism."

. . . "let us draw attention to the far-spread error that the small quantities in which the mineral substances occur in the organs, the blood and tissue juices, make them of little importance in the economy of the body. This is a fallacy!" That smallest quantities of the same are often capable of producing quite characteristic physiologic and pathologic effects upon the organism, is sufficiently known from the experiences in human and experimental pharmacology! Although from the small percentage of minerals in the body a small need may

*Literal translation from the German text: "bring back into the correct proportion the disturbed equilibrium of the mineral constituents."

rightfully be deducted, nevertheless the importance of this need must not be under estimated, and just as erroneous, therefore, is the far-spread, quite arbitrary assumption, which may be found in almost every text-book, that this relatively small need of minerals is usually in the food of man not only fully met, but even surpassed. In the case of a healthy person this certainly is true; it is the very reason why he remains healthy.

"But disturbances in the metabolism of the minerals occur as frequently as those of organic substances, and the former are of no less influence upon the vital processes than the negative balance in the metabolism of proteins, fats and carbohydrates.

"Were the supply of mineral salts always sufficient there would occur no anomalies in mineral metabolism, of which there are so many different and often very grave ones.

"Today it must therefore be taken as fact that with otherwise fully sufficient nutrition a grown organism perishes within a few weeks if the supply of mineral salts in the food is insufficient. After quick elimination of the circulating salts the body forcibly, as it were, retains but a minimum, which, however, does not suffice to retard death from 'mineral starvation.' How much the organism suffers from mineral starvation has been clearly illustrated by experimental observations with starving animals and above all by the well known experiments with the professional fasters Cetti, Breithaupt, Succi, on whom the very considerable changes of mineral metabolism were well observable. The designation of the mineral salts as 'Nutritive Salts' received its full justification through the fact that the renewed supply of salts in the food is capable of preventing death from mineral starvation, or of removing the already started health-destroying consequences of salt deficiency.

"From another recently acquired point of view of the physical conception of the processes of nutrition and metabolism, and of the physiological functions in general, the salts of food, in an indirect sense, possess absolutely a 'Nutritive Value.'

"It has been shown that the salts are by no means unessential and passively carried along accompaniments of the organic foodstuffs; on the contrary, they play an eminently active rôle in the assimilation of the total food and especially the organic foodstuffs. Although in a quite different way from the latter the salts too are carriers of energy which in the body is transformed into motion.

"This knowledge is one of the ripest fruits which the application

of modern physical chemistry in physiology and medicine has produced."

It would fall outside the scope of this paper to enter into an explanation of the laws of modern physical chemistry, therefore suffice it to say that the osmotic pressure of salt solutions is one of the forms of energy stored up in the minerals, and that the osmotic analysis of the blood, body juices and liquid foods, as well as of the secretions and excretions of the organism, has shed additional light upon the functions of the internal organs and the processes of metabolism.

If this subject prove of sufficient interest to my esteemed audience I shall take great pleasure in making the laws underlying and governing osmosis, and the methods employed in osmotic analysis, the subject of another paper.

For the purpose of this paper it is sufficient to quote again Albu-Neuberg as follows: "The absorption of the nutritive salts into the circulation represents a labor which is in direct proportion to the difference of the osmotic pressure between the food contents of the digestive tract on the one side and the blood and lymph on the other. These differences must be adjusted in order to keep constant the tone of the blood, the immutable physiological magnitude of which has been proved necessary for the conservation of life. This equalizing of the differences in the osmotic tension can be accomplished in no other way than through currents of motion in the liquids coming in contact with each other.

"By no means can all motions of liquids, which occur in the animal organism, for instance, in resorption and secretion, exclusively be referred to osmotic processes. But the latter in almost all physiological processes of the organism take a greater or smaller part, which we are able to determine far more accurately than other physical and physiological forces which are active in the organism like 'Diffusion' and 'Filtration,' and above all, the 'Vital Force,' which appears to regain a larger space in the views of modern physiology.

"In briefly stating the total present knowledge of their physiological importance, the minerals apparently have to perform in the body the following tasks:

1. They are cell and tissue builders; they take part in the formation, growth and reconstruction of all tissues of the organism in different degrees.
2. They bring about the osmotic tension in the cells and tissues, in the blood and other body juices, and thus are indirect carriers of energy.

3. They act as "catalysers" in a large number of chemical processes in the organisms. They, for instance, act as carriers of oxygen in the processes of oxidation. They cause those transformations of proteids in the cell protoplasm which are inseparably connected with their functions.

4. They are the agents of the autochthonic toxin and anti-toxin forming processes which unceasingly are going on in the living protoplasm, balancing each other by their partial antagonism.

5. They probably bring about a large portion of the so-called intermediary processes of metabolism, particularly in the glandular organs. Everywhere they regulate disintegration and assimilation of organic substances."

In Hammarsten's text-book of Physiological Chemistry, fifth American edition, New York, 1908, we find the following:

"Those bodies are designated as food which have no injurious action upon the organism and which serve as a source of energy and can replace those constituents of the body that have been consumed in metabolism or that can prevent or diminish the consumption of such constituents.

"We have learned by direct observation and a wide experience that besides the oxygen, which is necessary for oxidation, the essential foods for animals in general, and for man especially, are *water, mineral bodies, proteins, carbohydrates, and fats.*"

"The food may be quantitatively insufficient, and the final result is absolute inanition. The food may also be qualitatively insufficient or, as we say, inadequate. This occurs when any of the necessary nutritive bodies are absent in the food, while the others occur in sufficient or perhaps even in excessive amounts."

Russell H. Chittenden, Prof. of Physiolog. Chemistry, Yale University, in "The Nutrition of Man," page 3, writes:

"Indeed electrolytes are perhaps the substances that put life into the proteids of the protoplasm and it is truly important for the integrity and functional power of living cells that the proportion of mineral constituents therein be kept in a constant condition of quality and quantity."

Dr. Hans Köppe of Giessen in his paper, "Die Bedeutung der Salze als Nahrungsmittel" (the importance of the salts as food), read at the 68th meeting of German Naturalists and Physicians in Frankfort-on-Main, said:

"On the contrary, we have to consider the salts as food, indeed, for through them, or their solutions, the organism is supplied with

energy, which, thanks to van t'Hoff's theory of solutions, can be measured and whose effects in the organism can be studied.

"We now know that under favorable conditions a solution of mineral salts can render considerable labor because of its 'osmotic pressure.' This labor, however, is of a different kind from that of the proteids, carbohydrates and fats: while the energy of these materials, measured in calories, is transformed into heat, the energy of salt solutions expresses itself in modes of *pressure* and *motion*, and is measured in terms of atmospheric pressure."

Part of the energy with which we supply the body through the salts, is used for the absorption of food.

"In a totally different light appear now the mineral waters, when viewed with regard to the laws of osmotic pressure: Not only do they deserve our attention as carriers of a specific energy, but especially on account of the presence and the relative proportions of the large number of different salts. Even though they occur only in very small quantities, they are nevertheless the cause of highly important qualities of the mineral waters."

The action of mineral waters is due to their contents of neutral, i. e., not dissociated, molecules on the one hand, and the number and kind of the dissociated ions on the other.

"One must not forget, that the cause of a disease can rarely be traced to one single agent, or to the lack or altered metabolism of one mineral alone. Therefore the application of that one substance alone cannot cure the disease."

All of our natural food products, vegetable or animal, contain a large number of elements. So do all of our mineral waters, in some of the best known of which have been found as many as 26 elements.

The mineral constituents of the human organism and of foods occur in two distinct forms:

1. "One portion of the salts is firmly combined with the combustible substances of the body in the organized structure and as integral portion of the blood and juices. These are the real body salts."
2. "Another, very much smaller, portion is simply dissolved in the juices. These are the salts which are either set free by the disintegration and oxidation of the combustible substances in the organism, or have combined with the products of decomposition."

Experimental proof of the vast importance of the "Nutritive Salts" for the organism has been furnished by a large number of investigators, a few among whom are J. Forster, C. Voit, Bunge, Kem-

merich, Hofmeister, Hardy, Pauli, E. Overton, Hamburger, Köppe, Bredig, Loeb, Grützner, Russell, E. Voit, Höber, Goldberger, Heidenhain, Wallace & Cushny, Schade, v. Noorden, etc.

Above all, the classical and celebrated animal experiments by Forster deserve mentioning here, because they so clearly demonstrate two most significant facts, viz.:

1. Animals cannot live with an insufficient supply of "mineral salts."
2. Death occurs sooner in mineral starvation than in complete starvation. Or, in other words, proteins, carbohydrates and fats not only cease to be food when deprived of the mineral food salts but become actual poisons.

Animal tests have also demonstrated the fact that *inorganic* minerals, added to demineralized food, cannot take the place of the food minerals; while they retard death, they are unable to prevent it.

Much more corroborative material could easily be added, but the foregoing would seem to represent abundant evidence for the purpose and the scope of this paper.

Briefly recapitulating, modern science has established these facts:

1. Of all the vital processes and activities of the human organism not one is possible without the mineral constituents.
2. The mineral elements and salts are generators of energy.
3. The nutritive salts are of equal importance with the other essential constituents of food, viz.: Oxygen, water, proteins, carbohydrates and fats.
4. The mineral elements and salts in true organic form are indispensable foods without which the human organism cannot exist.
5. Mineral starvation causes serious disturbance in the vital processes and activities of the human organism. Or, expressed in simple language, mineral starvation causes disease and death.
6. Mineral starvation causes death in a shorter time than does complete starvation.
7. Most diseases are caused by the lack, or altered metabolism, of more than one mineral.
8. All natural foods and mineral waters contain a large number of elements. In some as many as 26 elements have been found.
9. By far the larger portion of the mineral constituents of the human organism and of foods are in organic form.

CONCLUSIONS.

The foregoing facts of modern science, if they have any meaning at all, compel to far-reaching conclusions, viz.:

1. The primary cause of disease, from a purely physical viewpoint, is chiefly mineral starvation.

2. Minerals in inorganic form cannot be utilized by the human organism as directly and effectually as can true organic minerals.

3. Foodstuffs not only lose their food value but become actual poisons in proportion to their loss of mineral bodies. Or, in other words, the more we deprive natural foodstuffs of their mineral portion, the more do we deprive them of nutritive value and convert them into poison.

4. Mineral starvation causes disturbance in the vital processes and activities of the human organism, reduces the supply of vital energy, pollutes the blood, body juices and tissues, and thus prepares a soil in which the omnipresent parasites thrive and multiply with little interference.

Unfortunately for the well-being and health of the individual and the human race, the manufacture of foodstuffs, as well as of medicines, has been tending more and more to isolation of chemical entities and our modern methods of "refining," "purifying" and "improving" the foods, which nature so abundantly furnishes, deprive the natural, wholesome food products of most of their mineral constituents and thereby reduce their real food value to a minimum. The human organism receives but a small fraction of the nutritive salts which nature evidently intended it to have, and the inevitable result is mineral starvation and its dire consequences in the shape of malnutrition, general debility, anaemia, indigestion, tuberculosis, rachitis, pernicious anaemia, decayed teeth, gout, carcinoma, appendicitis and other "modern" diseases.

A few examples will be sufficient to demonstrate this incontrovertible fact: The average grain of wheat contains 1.75% of mineral bodies. The finest patent flour contains only 0.44% of mineral bodies, which is only one-fourth of the quantity contained in the whole wheat. Unhulled rice contains 4.41% minerals, while polished rice, the kind we buy in every grocer's store, contains only 0.39% or less than 1/11th the quantity. Raw, brown sugar contains 1.97% minerals, while the most refined sugar contains 200 times less, viz.: 0.01%. In view of these facts is it any wonder that disease is the normal condition of our age and civilization and that perfect health is the very rare exception?

APPLICATION.

1. The food minerals can no longer be ignored wherever the health and well being of the individual and of the human race are concerned, for our health depends as much upon a sufficient supply of mineral bodies as it does upon a sufficient supply of pure air, fresh and pure water, proteids, carbohydrates and fats.

2. A rational, scientific estimation of the value of foodstuffs, and the needs of the human organism, must take into account all of the "necessary nutritive bodies," viz.: air, water, mineral bodies, proteins, carbohydrates and fats.

The now prevailing calorific standard of food value, which measures only the heat units produced in the combustion of proteids, carbohydrates and fats, and completely ignores the mineral bodies, is not only woefully inadequate in the light of modern science, but constitutes a menace to the health and life of the human race.

3. Rational scientific therapeutics can no longer ignore the mineral bodies. In the cure, as well as the prevention of disease, they must be given a more prominent place.

To be consistent with the facts of modern science the physician can no longer be content with combating the outward, or secondary expressions of disease alone. He must also remove its primary cause, viz.: Mineral Starvation.

Prof. Albert Robin, a clinician of Paris, France, years ago has drawn attention to the fact that mineral starvation is the primary cause of tuberculosis. His findings have been corroborated by Gaube, Ader, Dimitropol, Boureau and, in this country, by Dr. John F. Russell of New York City, who is treating cases of tuberculosis with marked success upon the basis of mineral starvation.

4. One of the most important duties of chemistry, at the present time, is to find a rational and scientific distinction between inorganic and organic forms of matter.

The foregoing facts of modern science, and the conclusions to which these facts compel, are illuminating the path along which a reformation of existing conditions in the manufacture of food, in the standard of food values, in therapeutics and in chemistry must and will eventually be accomplished.

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Editorial.

COLD STORAGE FOODS.

The city council of Chicago has recently made it unlawful to offer any cold storage foods for sale except the food is plainly marked with the date the food entered storage and the date of withdrawal. There will, no doubt, be more or less quibbling over what is cold storage. The city council meant well and good will come to the consumer from an earnest effort to enforce the law. The intention of the council was to help the consumer to know about what he was buying and to prevent deception. The evil in handling cold storage foods such as poultry and fish is after it leaves the warehouse. Such foods are stored in a frozen condition and require to be thawed out slowly, about twenty-four hours being necessary to do it well. After being thawed out they should be prepared for cooking immediately. If this be done and the food was right when it went into storage, it will be equal to the fresh article whether it has been stored one month or ten. Re-

tail markets thaw out their storage foods and then place them on sale, and the consumer usually believes them to be fresh. If the thawed food should not all be sold at once or should be held a day or two by the consumer, the chances are they will show imperfection when placed on the table. In such cases the fault was not with the cold storage warehouseman but with the retailer and the consumer.

There are many people who think fish, poultry, and butter should be delivered to the householder in a frozen condition. Consumers should know that it is not possible to get fresh poultry and fish in certain seasons and that for years they have been buying the storage article, deceiving themselves into thinking it was fresh. Fresh poultry is rare after February 1st until the new eggs are hatched and the birds have grown. Few fresh-water fish are caught during the first four months of the year. If poultry and fish are eaten out of their season, they are the storage kind but none the worse if treated honestly and right.

No article of food should be again placed in cold storage after it has been thawed, and here may come trouble with enforcement of the ordinance. The retailer may claim that his ice box is cold storage. It is cold storage, but its temperature is from 35 to 50° Fahrenheit while storage fish, poultry, and butter are kept at a temperature low enough to freeze them solid. Such foods if kept in an ice box in a wholly or partially thawed condition will deteriorate rapidly.

VICE CONTROL.

A new official crusade against segregated vice in Chicago is now on in earnest. The "red light district" is closed and the inmates scattered.

Many people believe that a section of the city should be set apart for brothels where they can be supervised and controlled by the police. The belief is based upon the idea that illicit intercourse between the sexes is unavoidable and even necessary, and that if prostitutes are scattered they will be placed in contact with decent and orderly homes, and further that the question is wholly a moral one.

It is more than a moral question; it is a sanitary question. With the newer knowledge of the extent and ravages of venereal diseases and the disability and deaths that they cause, it becomes also a question for those interested in business efficiency to consider. The existence of brothels with the drink debauchery; the sickening licentiousness; the all-around depravity; the disease, death, and slavery that is asso-

ciated with them, is repugnant to the American sense. The custom in European and Asiatic cities does not apply to free America.

Let the evil scatter if it will. In residence districts if it finds lodgment, it must necessarily maintain the appearance of decency and that will help some. It will then be shorn of the drink accompaniment, it will be difficult for patrons to find, and the commercial feature will be largely eliminated.

It is intolerable to go on forever with laws forbidding its existence that are not enforced. The public officials now trying to clean up the traffic must be encouraged and supported until the traffic is obliterated or the laws changed to permit it. No living man or woman need live an unchaste life. Lives of continence are not incompatible with good health and happiness.

PROGRESS IN SANITATION.

Newspapers of today are devoting large space to questions of sanitation and human welfare generally. There is scarcely an issue of a daily paper or magazine that does not contain one or more well written articles by physicians. In fact, physicians with a ready facility of expression are being employed by those publications more and more every day.

The result must be to enlighten large numbers of the public upon those questions that heretofore have been only advocated by the medical journals, which do not reach the general public. If the public is going to learn the things it should know about how to avoid sickness, it must come through the newspapers. There is no subject so entertaining to a reader as the question of health. Heretofore the only literature upon the subject that reached the average man was the patent medicine advertisement and that of the quack doctor.

CLIMATE AND TUBERCULOSIS.

The Department of Health of Chicago in recent Bulletins is wisely calling attention to the inhuman practice of allowing advanced cases of pulmonary tuberculosis to journey to western climates to suffer and die in misery and want.

In the Bulletin of September 28 is quoted, apparently from a publication of the National Association for the Study and Prevention of Tuberculosis, the statement that "tuberculosis can be cured in any part of the United States." This unqualified statement is not true,

yet it occurs repeatedly in the literature of the subject. Advanced pulmonary tuberculosis cannot be cured in any climate. Incipient pulmonary tuberculosis can be cured and often is cured in any climate with good care and management.

Book Reviews

HYPNOSIS AND SUGGESTION. Their Nature, Action, Importance and Position Amongst Therapeutic Agents. By W. Hilger, M. D., of Magdeburg. Translated by R. W. Felkin, M. D., F. R. S. E. With an Introduction by Dr. Van Renterghem, of Amsterdam; Translated by A. Newbold. New York: Rebman Company. Price, \$2.50 net.

The translation of Hilger's work adds another volume on hypnosis to the working library of the English-speaking physician. The introduction to this work by Dr. Van Renterghem is perhaps the most valuable portion of the book, giving very clearly a perspective view of the subject, its historical features, and its present status, and serves largely to harmonize the apparently conflicting views of the several schools and over-enthusiastic workers in this department of medicine. The essential uniformity of the phenomena, especially the practical identity of the means and methods employed, will be recognized after reading this scholarly introduction.

The work itself does not furnish much that has not already been elsewhere available. The historical introduction, chapters on sleep, and some psychological questions are rather briefly and not altogether adequately presented. The methods of developing marked hypnosis and its lesser varieties are not very clearly presented. The book terminates with a discussion of treatment under such headings as pain in the eyes, cerebral cortex reflex, nervous diarrhea, enuresis, etc.

The translator is not always emancipated from the foreign idiom, so that the reading of the book is less agreeable than otherwise might be the case.

FURTHER RESEARCHES INTO INDUCED CELL-REPRODUCTION AND CANCER. Vol. II. Consisting of Papers by H. C. Ross, M. R. C. S., Eng., L. R. C. P. Lond.; J. W. Cropper, M. B., M. Sc., Liverpool, M. R. C. S., Eng., L. R. C. P. Lond.; and E. H. Ross, M. R. C. S., Eng., L. R. C. P. Lond. With Illustrations. The John Howard McFadden Researches. Published by John Murray, Lon-

don, April, 1912. Imported by P. Blakiston Son & Co., Philadelphia.

This most interesting study is concerned with the elucidation of the theory that cell-proliferation and possibly cell-development are induced by chemical agents set free by cell death. This book is a continuation of a series of publications bearing on this subject. The first volume treated on "Induced Cell-Reproduction and Cancer," the second on "Further Researches Into Induced Cell-Reproduction and Cancer," and others are to follow.

The present volume proves that cell-proliferation and swellings resembling tumors can be produced in living creatures by the action of the same chemical substances which induce individual cell-multiplication. This book is interesting from first page to last; it is finely illustrated, and being published under the auspices of the John Howard McFadden researches, will have a wide circulation and stimulate further researches in this most interesting, fascinating, and complex subject. We congratulate our colleagues on the work accomplished.

THE BLOOD OF THE FATHERS. A Play in Four Acts. By G. Frank Lydston. The Riverton Press, Chicago, Ill.

With a dedication to Jack London and a preface in the characteristic Lydston style, this play is a very strong and forcible plea indeed for the control and regulation of marriage, the sterilization of degenerates, and the protection of the unborn. As such it is deserving of success and in this manner will enlighten thousands, who could not be reached in any other way as effective as this. Physicians will naturally be interested in this book, but should also take pains in circulating it among their patients and friends, and do their share in educating the public in these sociologic problems. There is no question, if every physician did his duty in this regard, but that we would for instance have a sane regulation of marriage in every state of the Union in less than a year. Lydston deserves the thanks of everybody for his ceaseless and heroic work in this direction, and in arousing the conscience of many who have been indifferent hitherto.

THE THERAPY OF SYPHILIS. Its Development and Present Position. By Dr. Paul Mulzer, of Berlin. With a Preface by Prof. P. Uhlenhuth, M. D., Privy Councillor. Translated by A. Newbold. New York: Rebman Company, 1123 Broadway. Price, \$1.50 net.

Nowhere in the history of medicine is to be found a more perfect example of the scientific investigation of disease and the result as

shown in its treatment than in the instance of syphilis. In a little less than seven years we have the discovery of the *spirochaeta pallida* by Schaudin in 1905, the discovery of the reaction and the introduction of serum diagnosis by Wassermann, and finally the sending to Professor Alt in September, 1909, for clinical testing of the new agent 606 by Ehrlich. Small wonder that our literature upon the subject should have been in need of revision. Among the best books upon the chemotherapeutics of syphilis must be numbered this of Dr. Mulzer's. Clear and concise, it lays before his readers the somewhat intricate chemistry of the subject, and goes into the clinical aspect with a detail that is gratifying to the practitioner. After a perusal of this book no one can fail to have a very clear idea of the present status of the treatment of the disease in all of its many aspects and stages. There is appended a very complete bibliography.

THE WASSERMANN REACTION. Its Technic and Practical Application in the Diagnosis of Syphilis. By John W. Marchildon, B. S., M. D., Assistant Professor of Bacteriology, St. Louis University Medical School. Eleven Illustrations and Colored Frontispiece. St. Louis: C. V. Mosby Company, 1912. Price, \$1.50.

This book will be very serviceable to all laboratory workers and students. It will be interesting also to those physicians who, while they do not want to attempt so difficult a procedure themselves, yet would like to thoroughly understand the principle of the reaction and have a theoretical knowledge of its practical technic.

SURGERY OF THE BRAIN AND SPINAL CORD: Based on Personal Experiences. By Prof. Fedor Krause, M. D., of Berlin. English Adaptation by Dr. Max Thorek (Rush Medical College, University of Chicago). Volume II. With 94 Figures in the Text, 14 of Which Are Colored, 27 Colored Figures and 4 Half-Tone Figures, on 15 Plates. New York: Rebman Company, 1123 Broadway. Price, \$7.00 net.

The translation of the second volume of Professor Krause's magnificent work has just been issued by the Rebman Company and serves but to increase our admiration for the work and the author. With the publication of the final volume it will present a complete statement of the subject as it is today. Throwing as it does fresh light upon the pathology, localization, and operative technic, the author has still made it an exceedingly practical book. It would have been hardly possible for this book to have been prepared except in some place (as in Germany) where authority has full control over the patient, where

in all cases of a fatal termination the observations of the pathologist can be compared with those of the clinician, where the records of the autopsy room can be used to check the records of the diagnostician.

The work has been done with all the painstaking care of the experimental laboratory. Each subject has its strictly surgical side supported by the use of every known means of diagnosis and localization, with complete neurological observations, and each case has been most carefully followed up. The observations of each case, which comprise the clinical history with the record of all studies and observations made, make it a perfect mine of information, useful alike to the surgeon, diagnostician, and neurologist.

This volume takes up the subjects of "Epilepsy" and "Neoplasma of the Brain." It would give the reader a better idea perhaps of the detailed thoroughness of the work to give a resume of the subheads. Under "Epilepsy" we have, first, introductory remarks on physiology, then Jacksonian epilepsy, its etiology, tumors as a cause, infantile paralysis as a cause, injuries at birth, Jacksonian epilepsy without anatomic findings, result of cortical excisions, general genuine epilepsy, results obtained from operations with the indications for operation, traumatic and reflex epilepsy. This subject is dealt with in the first four hundred and ninety-three pages of the text. Then there comes the second division "Neoplasma of the Brain," with the subheadings of general symptoms of cerebral pressure, focal symptomatology, scheme of localization in the cerebrum, neoplasma of the frontal brain, then as a supplement to the operative technic the use of suction in the removal of cerebral neoplasma is argued, then symptomatology, neoplasma of the central region, neoplasma of the central lobe and the region of the island of Reil, neoplasma of the parietal lobe, then of the occipital brain, neoplasma in the posterior fossa of the skull, general symptoms of cerebral pressure, focal manifestations, participation of the cerebral nerves, cysts in the posterior fossa, solid tumors in the posterior fossa, neoplasma at the base of the brain and in contiguous regions. The volume concludes with operations on the brain stem and its vicinity, completing a text of 815 pages.

The translation has been made by Dr. Max Thorek, who has executed a difficult task carefully and well, the English text reading smoothly and clearly. The illustrations are well defined, the colored plates of operations are of unusual interest, being executed, the author tells us, by a method of rapid sketching during the operation which does not in the least interfere with his work. The publishers have spared nothing in getting the book out. Printed with clear type

upon heavy paper with a wide margin and strongly bound, it is a luxurious volume.

PROGRESSIVE MEDICINE. Vol. XIV, No. 3. September, 1912. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by H. A. Hare, Professor of Therapeutics and Materia Medica, Jefferson Medical College; and Leighton F. Appleman, Instructor in Therapeutics, Jefferson Medical College. Philadelphia: Lea and Febiger.

As usual the scientific world has been carefully gone over to find all the recent discoveries and improvements in the different subjects that are taken up in this quarterly. This number includes articles on diseases of the thorax and its viscera, including the heart, lungs, and blood vessels, by William Ewart, M. D., F. R. C. P.; dermatology and syphilis, W. S. Gottheil, M. D.; obstetrics, by Edward P. Davis, M. D.; diseases of the nervous system, by William G. Spiller, M. D. A complete index is also furnished.

PATHOLOGY AND TREATMENT OF DISEASES OF WOMEN. Fourth Edition, Rewritten by A. Martin and Ph. Jung. Only Authorized English Translation Written and Edited by Henry Schmitz, M. D. With 187 Illustrations, 25 of Which Are in Color. New York: Rebman Company, 1123 Broadway. In Cloth, \$5.00 net.

It is a pleasure to read such a book as this. Based upon a sound pathology, it teaches this special branch of medicine in a way that makes it of unusual service to the student and physician. While the authors make use of the work of other men freely, yet for the most part they write from the results of their own study and experience. They are not ashamed to be conservative, when conservatism seems best for the patient; nor are they afraid to be radical, when that extreme seems to promise the best results.

The section upon pathology of the vagina and uterus is one of the best expressions upon that subject we have read in some time. Beginning with anamolies of development, changes of form and position, it takes up in succession malformations, absence of or rudimentary development, versions and flexions, prolapsus, perineal lacerations, inflammations of vulva, vagina, and uterus. Then follow chapters upon diagnosis, prognosis, and treatment; then the general subjects such as gonorrhea and tuberculosis; then in detail, the effect of their invasion of individual organs. The detail of this one section will give some idea of the thorough manner in which each section is treated.

That upon tumors of the vagina and uterus must be especially commended for its thoroughness in pathology and diagnosis. Tubes and ovaries are written of in the same painstaking manner. Two of the best sections in the book are those upon diseases of the pelvic connective tissues and diseases of the pelvic peritoneum. The illustrations are unusually clear and instructive, and the value of the book is greatly enhanced by a full bibliography. Altogether it is a book that will be a great aid, not only to the gynecologist, but to the physician in general practice, to the student as well as to the teacher.

DISEASES OF WOMEN. By Arthur H. N. Lewers, M. D., London, F. R. C. P. London; Senior Obstetric Physician to the London Hospital; Examiner in Midwifery and Diseases of Women at the Conjoint Board of the Royal College of Physicians of London and of the Royal College of Surgeons of England; University Scholar and Gold Medallist in Obstetric Medicine, London University. Seventh Edition. With 258 Illustrations, 13 Colored Plates, 5 Plates in Black and White, and a Large Number of Illustrative Cases. New York: Paul B. Hoeber. 1912. Price, \$4.00 net.

This is a fine example of a practical working text-book for physicians and students. This, the seventh edition has been carefully revised. Much has been rewritten and much new matter introduced. Based largely upon his own extensive experience, the author has kept prominently in view the clinical aspect of the subject, including the introduction of clinical histories and case records to illustrate the different morbid conditions described. One of the features of the book is a very clear description of Wertheim's hysterectomy, detailing minutely the different stages and technic of the operation, which the author regards as undoubtedly the best in all cases of carcinoma of the cervix, unsuited only to the very feeble or the aged. This detail of description of operative technic is noticeable throughout the book.

Nor are the pathological sections any less plainly stated. The book is profusely illustrated and unusually well done, especially the micro-photographs. They really illustrate the text. Altogether this is a book that can be most cordially recommended to the profession and to students in our medical schools.

MUSCLE SPASM AND DEGENERATION IN INTRATHORACIC INFLAMMATIONS AND LIGHT TOUCH PALPATION. By Francis Marion Pottenger, A. M., M. D., LL. D., Medical Director of the Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia,

California. Sixteen Illustrations. St. Louis: C. V. Mosby Company. 1912. Price, \$2.00.

The author states that the material of this monograph is with very few changes the same as that which appeared in Brauer's *Beiträge sur Tuberkulose*, Band XXII, Heft 1, 1912. The observations and practical suggestions here recorded are based upon the original observations made by the author during the last three years in several thousand physical examinations and checked by other methods of diagnosis. The proposition of the author is based upon two clinical facts which he had observed, that the muscles of the chest and neck are in a state of spasm in the presence of acute inflammation, and of degeneration in the presence of chronic inflammation. From this basis he has developed a new method of physical diagnosis, one that should it be sustained by further investigation will place in the hands of the physician an aid to diagnosis which should rank with auscultation and percussion, particularly in the early detection of tuberculosis of the chest.

He has also developed a method of diagnosis by light touch palpation, to be used in outlining the various organs as well as growths of the abdomen and chest.

It is a monograph of great interest and should be in the hands of all physicians and students, and by them studied most carefully, for even should it not come up entirely to the author's expectations it will undoubtedly prove of great value.

News Items

For Rent.—Office hours in a newly finished and newly furnished suite. Attendant furnished. Dr. John L. Porter, 907 Chicago Savings Bank Building, 7 West Madison street.

For Rent.—Office hours in very desirable rooms in physician's suite. Room 705, 15 East Washington street, Venetian building, Chicago.

Personal.—Dr. E. J. Doering has returned from a trip abroad.

Dr. and Mrs. William T. Gilman have returned from Europe.

Dr. and Mrs. Clarence Webster, who spent the summer on their farm in northeastern Canada, have returned to the city.

Dr. Alexander Donald Ferguson, son of the late Dr. Alexander Hugh Ferguson, was married last month to Miss Dorothy Williams of this city.

Dr. and Mrs. D. E. Ricardo have returned to Chicago after an absence of a year and are at their residence at the corner of Sixtieth street and Calumet avenue.

Dr. and Mrs. A. H. Burr have moved to 1302 Davis street. Their former residence at 1007 Judson avenue is to be put up for sale.

Dr. and Mrs. C. Gurnee Fellows and family have returned from their summer home and are again at 4820 Kenwood avenue.

The marriage of Miss Cecile Murphy, daughter of Dr. and Mrs. John B. Murphy, to Julius Thompson Benedict of this city, will be celebrated Tuesday, November 5.

Announcement is made of the approaching marriage of Miss Dorothy Dudley, daughter of Dr. and Mrs. E. C. Dudley, to Henry Harvey.

Dr. and Mrs. P. S. Doane and their family, 1427 North State street, have returned to town from their summer home at Winnetka.

Dr. John M. Lang has been appointed an instructor in clinical gynecology at the Illinois Post-Graduate Medical School, Chicago.

Dr. William L. Ballenger, who received an injury to his foot while returning from England a few weeks ago, has recovered.

Wanted.—Young medical student or doctor to correspond with us about a new way of money and friends making in the health and efficiency promoting line. Address Geo. A. Schmidt (IT) Co., 236-238 North avenue, Chicago. Established 1875.

Dr. Frank H. Blackmarr desires to announce his return to office and hospital practice of Electro-Therapeutics—X-ray Therapy, Radium Therapy, X-ray Laboratory for rapid work. Office hours: 935 Marshall Field building, 8:30 a. m. to 9:30 a. m., telephone Private Exchange 1; 551 E. 47th street, 11 a. m. to 3 p. m., telephone Oakland 1719.

New Books.—Messrs. Rebman Company of New York beg to announce now ready:

1. Surgery of the Brain, Vol. II, by Fedor Krause, M. D., of Berlin.
2. Ophthalmology, Vol. II, by Roemer, M. D.

On the press:

3. *Surgery of the Brain and Spinal Cord*, Vol. III, by Fedor Krause, M. D.

4. *The Disease of the Oral Cavities*, one volume, by Zinsser, M. D.; 51 colored illustrations (four color process) and 22 (one of which is colored) illustrations of the teeth, spirochetæ and treponemata.

Clinical Lectures on Diseases of the Skin.—The governors of the New York Skin and Cancer Hospital announce that Dr. L. Duncan Bulkley will give a series of fourteen clinical lectures on diseases of the skin in the out-patient hall of the hospital on Wednesday afternoons, from October 30 to December 18, 1912, at 4:15 o'clock. The course will be free to the medical profession, on the presentation of their professional cards.

Crawling Aid to Digestion.—According to newspaper reports, crawling on all fours after meals is the latest treatment for digestive ailments, said to be recommended by a French specialist. The stooping position is supposed to eliminate the "gastric pocket" and thus prevent the stagnation of food at that point, while the exercise of the abdominal muscles is an excellent means of stimulating digestion.

A Useful Catalogue.—The W. B. Saunders Company have issued a most useful book catalogue, giving a list of all books on medicine, surgery, dentistry, and other scientific subjects. It is alphabetically arranged, very complete and very neatly gotten up. One can at once find any book he wants, its publisher and price, without delay or trouble.

Prizes Offered by American Therapeutic Society.—On recommendation of the Council of the American Therapeutic Society, at the annual meeting of the society, held in Montreal, Canada, June 1, 1912, it was voted the prizes of two hundred and fifty dollars (\$250), one hundred and fifty dollars (\$150) and one hundred dollars (\$100) be awarded to the best reports on subjects relating to therapeutics, on the following conditions:

1. The competition is to be limited to qualified physicians in the United States and Canada.
2. The subject of the competition is to be limited to a substance or preparation which is official in the United States Pharmacopoeia.
3. The research may be either wholly laboratory or clinical, or laboratory and clinical combined, and must be conducted in a public institution.
4. The reports must be (a) designated by a distinctive word or motto, and (b) must be accompanied by a sealed envelope marked with the said word or motto, and containing the name and address of the competitor and of the laboratories or hospitals in which the research was conducted. (c) The report and protocol must be typewritten. (d) These must be in the hands of the chairman of the committee before April 1, 1913.
5. The reports and protocols are to be judged by a committee consisting of the three vice-presidents of the society, who shall decide which

are the best reports as showing valuable therapeutic research, and shall return their decision, together with all the papers submitted to them, to the chairman of the council of the society before May 1, 1913.

6. The chairman of the council shall then return the unsuccessful reports to their authors, and shall notify the successful author or authors.

7. The successful report or reports shall be read by the author, or a designated member of the society, on the first day of the meeting of the society immediately after the president's address.

8. All matters connected with the competition shall be considered as absolutely confidential by the chairman of the council and the judges, except as to the successful competitors.

9. The vice-presidents as judges may fail to award any prize if the report or reports entered in the contest are not found to be of a sufficiently high standard.

10. In case any vice-president shall fail to act, the president of the society shall designate a substitute.

The chairman of the committee on this prize competition in therapeutic research is Dr. Reynolds Webb Wilcox, 679 Madison avenue, New York.

Mississippi Valley Medical Association.—The thirty-eighth annual meeting of this association will be held at the Hotel Sherman, Chicago, October 22, 23 and 24.

The officers are: President, Louis Frank, M. D., Louisville, Ky.; first vice-president, Albert E. Sterne, M. D., Indianapolis, Ind.; second vice-president, F. W. Werner, M. D., Joliet, Ill.; Secretary, Henry Enos Tuley, M. D., Louisville, Ky.; treasurer, S. C. Stanton, M. D., Chicago.

There will be separate morning sessions for the medical and surgical sections, with a joint meeting of both sections in the afternoons. Many interesting papers are promised in the preliminary program which has been issued.

Will Their Bodies to Science.—Two hundred physicians of Brooklyn and Long Island have taken the initiative in a movement to overcome the prevailing opposition of the general public to autopsies. At a meeting this month of the Associated Physicians of Long Island, the members indorsed a resolution whereby they agreed to give their bodies over at death to autopsy for the advancement of medical science.

The understanding is that each member of the association who accepts the terms of the agreement must direct his heir or executors to allow an autopsy to be performed, so that the cause of death may be determined.

Scandinavian-American Society.—At the twenty-fifth anniversary convention of the Swedish-American Society, held October 10-11, several Chicago physicians took an active part. Dr. William J. Anderson is president of the society; Dr. A. Holmboe, chairman of the entertainment committee; Dr. Ludvig Hektoen was in charge of the scientific program presented on the first night; Dr. N. T. Quales, one of the oldest physi-

cians in active practice in this city and the first interne of the county hospital, was also a prominent figure.

Physicians Who are Addicted to Drugs.—In the October "Century," Charles B. Towns writes of the grave danger resulting from drug-taking physicians, nurses and pharmacists. He takes an optimistic view, however, of the percentage of drug-takers among the profession, claiming that the reports on this subject have been grossly exaggerated, and that the number is less than five per cent. Even this percentage is quite high enough to be a standing menace.

A Clinic in Defects of Speech and Voice is now in operation in connection with the Nose, Throat and Ear Department, at Rush Medical College. Patients (the poor only) may be directed to the Central Free Dispensary, 1744 W. Harrison street on Mondays or Thursdays from 2 o 3 p. m.

TWICE TOLD TALES.

(From B. L. T.'s Line-O'-Type in the Chicago Tribune.)

Cruel and Unusual.

(From the St. Louis Republic.)

Beckwith Havens, while driving a hydroplane with Stanley Twist as a passenger, had a puncture in his pontoon.

An Odd Complaint.

(From the Erie (Kan.) Record.)

Miss O'Dwyer has been bothered with a garter for some time past, and she is taking this operation in hopes that she will be cured.

Nor Did He Always Succeed.

(From a Latin exam. paper.).

"Caesar had enough to do to keep his soldiers from populating the surrounding territory."

"Expect Mildred to Become Big Producer."—Headline.

A bit startling until one discovers that Mildred is an Arizona gold mine.

The Ingenious Make-Up Man.

(From the Kelso (Wash.) Journal.)

Dr. Davis reports the birth of a son to Mr. and Mrs. A. Orum of this city Wednesday.

After September 1st milk will be 4c a pint, 7c a quart, and 25c a gallon.—H. E. Hose, Dairy.

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CHICAGO MEDICAL
RECORDER

NOVEMBER, 1912.

Original Articles.

MUNICIPAL SANITATION.*

By ARTHUR R. REYNOLDS, M. D.

Municipal sanitation embraces that protection to the health and lives of people by government that the individual cannot well give to himself. It does not differ from national sanitation, from state sanitation, or from rural sanitation, except as to scope and locality.

Sanitation deals with conditions that are harmful and also with the direct prevention of individual disease and its treatment. In the past, sanitation dealt almost wholly with the treatment and prevention of epidemics of disease. Now, sanitation is concerned if unnecessary disease or death occurs singly, or from any cause. Sanitation, if viewed in comparison with any other single field of human endeavor, stands abreast with the best at least, and in my judgment it towers head and shoulders above them all.

In the old days pestilential epidemics swept over the world and decimated the population at frequent intervals. They were thought to be unpreventable and were supposed to be the regular order of nature. They were then viewed much as financial panics are now viewed by our financiers. They always have existed and must continue to exist. Epidemics of the black death or bubonic plague (as it is now known to be) visited Europe again and again and it has been estimated that they destroyed millions of lives. Smallpox was ever smouldering and frequently would become epidemic and destroy human lives by the thousand.

Lord Macaulay, in his history of England, speaking of the death of Queen Mary of smallpox in 1694, said, "That disease over which

*Read before the Chicago Political Equality League Nov. 2nd, 1912.

science has since achieved a succession of glorious and beneficent victories, was then the most terrible of all the ministers of death. The havoc of the plague had been more rapid, but the plague had visited our shores only once or twice within living memory, and the small-pox was always present, filling the church yards with corpses, tormenting with constant fears all whom it had not yet stricken, leaving on those whose lives it spared the hideous traces of its power, turning the baby into a changeling at which the mother shuddered, and making the eyes and cheeks of the betrothed maiden objects of horror to her lover." So universal was smallpox then that a woman who was referred to as beautiful was one whose face was not pockmarked.

Asiatic cholera has scourged the earth periodically. Yellow fever was a constant menace and frightfully fatal. Malaria counted its victims by thousands. Epidemics of diphtheria were always on hand and frequently destroyed whole families of children. Typhus fever, or ship fever, was the dread of seaports and sea-faring men. Typhoid fever was prevalent and deadly. Cerebrospinal meningitis was frequently epidemic. All of these diseases have been conquered as to being a serious menace to mankind. Never again can any civilized community be scourged by them. The elimination of epidemics from these diseases is the contribution of medicine to the body politic. Further, it must be noted, that this priceless gift from medicine to humanity has been donated without patent protection and without price. It is a free will offering. What it is all worth to the world in dollars and cents (and in this age it is necessary to reduce everything to a cash basis), can be computed by multiplying the total number of deaths that would otherwise have occurred by five thousand dollars, the value placed upon human life by economists and sometimes by legislation.

Medicine asks for no encomiums because of its unceasing work in the cause to which each practitioner has consecrated his life. Medicine asks for nothing in return for itself, but it does ask that sanitary officials everywhere be backed by sufficient funds and public spirit to make their labors everywhere efficient. Medicine asks that medical institutions of learning be amply supported by the state and by the endowments of the charitable rich. Medicine asks that a department of health be established by the federal government at Washington, with a trained sanitarian in the President's cabinet at its head, to the end that disease may be further eradicated and that death may be further postponed. Medicine asks that everyone who knows should do his best to educate the ignorant and prevent them

from resorting to all kinds of nostrums or patronizing incompetent or dishonest practitioners.

Sanitary effort in the past has been rich in its fruitage, but the work is not yet half done. Tuberculosis, scarlet fever, measles, whooping cough, mumps, and many other diseases are still unconquered. A large field upon which sanitation has yet made but little impression and which is a great factor in producing disease, inefficiency and premature death, is due to the habits of the people.

I refer first to the habits of eating, and of drinking intoxicants. No class is wholly exempt from error in this respect. All people who lead indoor lives eat too much. The evil is not always noticed until the approach of middle life. Then nervous disorders begin to show, indigestion is common, nutritive disturbances yielding a variety of symptoms are prevalent and are the source of most of the undefined ailments for which treatment is sought. Women assign their illness to troubles peculiarly their own, but they are mistaken. Ninety per cent of the time the trouble is due to twenty-five years of over eating and often to an improper selection of their food. Men have the same trouble a little later in life. They call it a "break down" and generally flounder around four or five years before they find their level. Too often they add to their troubles by taking cocktails and highballs to give them an appetite when their poor, tired and worn out digestive apparatus needs only a rest from a quarter of a century of abuse. People who labor hard get over-hungry and bolt much of their food unchewed and come to grief like the rest. Under such conditions it can be readily understood that the resisting power against disease is greatly lowered and renders one liable to attack.

A large part of the disease and death of childhood is due to improper feeding. Children are fed too much stale and dirty cow's milk. When a child gets its teeth, those teeth should be put to work, and the child should be given food it can chew. Nature provides that milk go direct from the mother to the stomach of the offspring, sterile and without change of temperature. Cow's milk, for six hours after it is drawn, remains reasonably sterile and even has some germicidal power; after six hours, germ life multiplies with hourly increasing rapidity and by the time it is 24 or 48 hours old, as it is used in cities, it is often a very dangerous food for the young and its use as a raw food should be discouraged.

Those who drink intoxicants to excess are less numerous than those who eat in excess, but their decline in health is more rapid and is more certain. It produces hardening of the arteries, liver, kidney

and other tissues of the body, lowers vital resistance and renders them susceptible to attacks of acute diseases, while it bequeaths a miserable inheritance to their progeny.

The vice habits of the people are to blame for those terrible diseases that are too often transmitted to innocent brides and produce lingering, painful illness and death to many, while the survivors are generally forbidden the joys of maternity. They are the cause of a large part of the ailments of women, for the relief of which major surgical operations are made. To one of these diseases is due practically all the paresis that we hear of so frequently.

Vice has recently been attacked in a wholesale way in Chicago. The specious plea goes up that the morals of the people cannot be governed by law or the police power and that vice districts and vice itself, is necessary and is to be tolerated and isolated. Medicine teaches no such doctrine, and I am here to assert that lives of chastity and continence are in no way incompatible with good health and perfect mental equilibrium.

That vice should be permitted as a trade or traffic with its sickening licentiousness, with its drunkenness, disease, slavery and all round depravity, with any kind of governmental sanction is abhorrent to the American sense.

Whether people can be forced to live moral lives is apart from the question. For sanitary reasons, if for no other, vice as it is known and practiced in large cities must be speedily and permanently crushed. I speak in no fault finding way. I am an optimist, and believe the sun rises upon a better world every morning. Progress in the right direction is more rapid now than at any time in history. Notwithstanding all the gain that applied science has given us, the still needless sacrifice of human life naturally makes one who is interested somewhat impatient.

In the work of the further correction of sanitary ills all sane efforts are useful, but the most powerful and lasting labor that has been performed is the education of the masses to the dangers, and the remedies, and along these lines rests the hope of the future.

As an instance of the value of education of the public, may be cited the work done in Chicago in the '90's, to check typhoid fever. The disease was caused by the pollution of the drinking water drawn from the lake by the sewage that then drained into the lake. The Sanitary District Canal was not opened for the flow of sewage and water from the lake until January, 1900. In 1891, upward of 24 persons out of every 10,000 of population died of typhoid fever.

This mortality rate was gradually reduced below 16 out of every 10,000 by the year 1899, simply by educating the public to boil the water before drinking.

Education of the public as to their danger from the ills that follow faulty habits of life is the ready and most potent weapon to use.

Every leaflet and bulletin that sanitary authorities can issue should be put out and frequently repeated. They will find a place in the daily press and reach the whole public. Every organization that is interested in the city's betterment should discuss the question on every possible occasion.

HERNIAS OF THE OVARY, OF THE FALLOPIAN TUBE, AND OF THE OVARY AND THE FALLOPIAN TUBE.*

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In the female, the frequency of hernias, and especially of hernias of the internal genitalia, has been and is still underestimated. Owing to the lack of study heretofore given to this clinical entity, hernias of the uterine adnexæ are often overlooked, not uncommonly misdiagnosed, and, therefore, subjected to injudicious treatment; harmful alike to the individual and to the hernial contents, prejudicial alike to the patient's general well-being and to her reproductive powers. Impressed by the clinical importance of the condition and surprised at the insufficient consideration given to the subject in even the most modern gynecological and surgical text books, I have collected the following data, which may prove of service to some of my professional colleagues as well as to future investigators of the subject. Knowledge of the occurrence and familiarity with the symptomatology of a clinical condition lead to its more frequent and more timely recognition.

Soon after beginning the consideration of the subject, we became convinced that deductions and conclusions to be valuable, should be based solely upon the study of cases whose accuracy of diagnosis is self-evident. Therefore, in the preparation of this paper, we have only considered cases in which the hernial contents were demonstrated at the dissecting, autopsy or operating table.

We have conformed to the nomenclature in actual use; however, to better insure precision of classification and a more intelligent discussion of the subject, we define, at times, perhaps needlessly, the terms employed. The word hernia signifies the permanent or temporary protrusion of one or more viscera from their normal situation through a normal or abnormal opening in the walls of the cavity within which they are contained. It implies the existence of a hernial ring, of a hernial sac, of hernial sac contents and of sac coverings. In the hernias discussed in this article, the protruding organ was always either an ovary, an oviduct, or Fallopian tube and an ovary. In some cases, as associated hernial contents we find omentum (1), a segment of the alimentary canal (2), a part of the urinary bladder

*Read before the Chicago Medical Society and before the Illinois State Medical Society.

(3), a rudimentary uterine horn (4), or the entire uterus, be the latter organ rudimentary (5, 6), infantile (7), or of normal development. The tube or ovary or both in part or in their entirety may be herniated. All the hernias herein considered are external hernias; that is, their outermost overlying saccular covering is skin, and each, after reaching a certain stage of development gives rise to a more or less visible, more or less palpable external swelling in the inguinal, femoral, ventral, obturator or ischiatic regions, depending upon the anatomical location of the hernia. Internal hernias, that is hernias in which one or more loops of intestine find their way into pouches or recesses in the posterior peritoneal wall, and diaphragmatic hernias, be the latter true or false, congenital or acquired, constitute other chapters of surgery.

The escape of the uterine appendages from their normal situation may take place through any of the weak spots or openings of the lower abdominal or abdomino-pelvic cavities. A hernia originating either in the internal or in the external inguinal fossæ and escaping above Poupart's-ligament is an inguinal hernia; if escaping beneath the same ligament, it emerges through the crural canal and the saphenous opening, it is a femoral hernia; if through the obturator canal, an obturator hernia; if along the course of the gluteal or sciatic nerves and vessels, emerging almost always above, very infrequently below the pyriformis muscle, very rarely through the lesser sacro-sciatic foramen, a gluteal hernia; if through an operative scar in the abdominal wall, a post-operative hernia (8).

Though sanctioned by long usage, the classifying of hernias into congenital and acquired is, at times, misleading. It is misleading because it is practically impossible to determine the congenital or acquired nature of many hernias. Furthermore, the term congenital hernia, as now used, does not imply in the female that the hernia was present at birth, as it is also applied to hernias whose post-natal development is due to predisposing conditions of congenital origin; developmental defects, persistence of transitory embryonal or fetal states which, owing to their non-disappearance with growth, permit the occurrence of outward visceral displacements. Some hernias are congenital in the truest sense of the word; they are complete at birth, hernial contents being then present. In most of the so-called congenital hernias, the sac only is existent at birth; in an acquired hernia, the sac is always of post-natal development, and in all but hernias *par glissement* is entirely derived from the parietal peritoneum. Congenital hernial sacs result from the want of closure of peritoneal

processes, such as the processes vaginalis peritonei in the male, the canal of Nuck in the female, etc., normally present in the fetus. Congenital hernias may appear at any period of life.

Orifices for the transmission of vessels and ducts are normally present in the muscular and aponeurotic layers of the abdominal walls. An acquired hernia is formed by the gradual or sudden escape through these orifices, pathologically widened, of viscera normally contained within the abdominal cavity; the viscera in their passage through and beyond the abdominal wall create paths of escape for themselves by bulging and pushing forward the parietal peritoneum.

In many cases, the congenital or acquired nature of the hernia is either too vaguely stated or is left unmentioned. Femoral hernia seldom occurs before adult life.

Tubal, ovarian and tubo-ovarian hernias occur in the colored (9) and in the white race. Commonly, the condition is unilateral; infrequently, it is bilateral. When bilateral, the hernias may or may not be developed to the same degree on both sides. The bilaterality may date from birth; may be acquired. In the latter case, the hernias may from the first have been bilateral or an interval of time of shorter or greater length may have intervened between the appearance of the two hernias. Broca's case (10), when patient was eight months old, the right inguinal hernia appeared, but the left inguinal hernia did not become manifest before the patient was four years of age. All the bilateral tubal, ovarian, or tubo-ovarian hernias recorded in the medical literature of the last twenty years are of the inguinal variety. This is in accord with a well-known fact that, in both sexes, double femoral hernias are less frequent than double inguinal hernias.

A tubal, an ovarian, or a tubo-ovarian hernia may co-exist with one or more hernias of other organs. Multiple hernias are not infrequent, the hernias present being either of the same or of different types, as two inguinal hernias (11), or one inguinal and one femoral hernia on the same or on opposite sides of the body. For instance: In Gladstone's case (12), there was a right crural intestinal hernia and a right obturator hernia of the Fallopian tube, co-existing with a left obturator hernia of the urinary bladder.

The hernias which we have under consideration may or may not be associated with non-development, malformation, or absence of the other internal or of some external genitalia: Infantile pelvic organs (13); bicornuate uterus (14); absence of vagina (5, 15, 16); imperforate vagina (7, 17); absence of vagina and cervix

uteri (18). In Delay's case (16) rectal examination did not reveal the presence of uterus; patient had never menstruated.

The hernia may co-exist with other congenital pathological states, as patulous umbilical ring (19), congenital chronic hydrocephalus (20); may be present with acquired disease or acquired malposition of the uterus or of the non-herniated adnexæ. Complete uterine prolapse (21, 22); uterine fibro-myoma (3). In Martin's (Kossmann) case (23), a hernia of the left tube and ovary, the uterus was displaced upwards, forwards and to the left by a cyst of the right ovary having the volume of a man's head.

In almost all the cases the operation performed was a herniotomy, and as herniotomy affords little opportunity for direct examination of the pelvic organs, the condition of the non-herniated genitalia was determined in only a few cases.

Hernia is a widespread disease. Its relative incidence as to age corresponds to that of hernia in general. In our series, the youngest patient (24)) was four weeks old at time of operation. Nicoll (25) operated successfully for ovarian hernia two infants, each one and a half months old. The oldest patient (21) operated on was seventy-eight years old. She had a left tubal obturator hernia. Lickley (26) reports a right tubo-ovarian obturator hernia observed in a dissecting room subject who had died of general debility and hemiplegia at the age of eighty-seven years. In many cases, the age is not stated. The age given by most authors corresponds to the age of the patient at the time of operation and not to the age at which the hernia first appeared.

The study of the reported cases demonstrates:

- a. The frequency of hernias during the first year of life.
- b. The rarity of the condition from the first to the fifteenth year of life.
- c. The noticeable progressive increase in the number of hernias observed from the fifteenth year on, the maximal frequency being seen during the fourth decade of life.
- d. After the fortieth year, there is a decline of the number of hernias; they become relatively rare as the extremes of life are approached.

The preponderating frequency of hernias in the first year of life is due to the large number of congenital hernias and also to the fact that during the first year more persons are alive than during any subsequent year. By the closure of the abdominal rings, by the obliteration, partial or complete, of the processus vaginalis

peritonei or of the canal of Nuck, and by the building up of the posterior wall of the inguinal canal, many congenital reducible hernias are cured spontaneously during the first two years of life. Thus is explained the great dropping off in the number of hernias observed between the second and the fifteenth year. With the advent of adult life, many predisposing and exciting causes of acquired hernias become operative and ruptures during this epoch are noticeably frequent. As hernias, by their complications, shorten life duration, the number of hernia-bearing individuals that reach an advanced age is small as compared to that of the non-herniated.

During the child-bearing period, hernias of either or of both uterine appendages have been observed in nulliparæ (6, 18, 27, 28), in primiparæ (29, 30, 31, 32), and in multiparæ (27, 29, 33, 34, 35, 36). Other cases in which pregnancy occurred either previous to or during the existence of tubal ovarian, or tubo-ovarian hernias, are the following multiparæ: 2-paræ (27, 37, 38, 39, 40, 41); 3-paræ (9, 33, 42, 43); 4-paræ (44, 45); 5-paræ (46, 47); 6-paræ (2, 48, 49); 8-paræ (50, 51); 9-paræ (52); 13-paræ (53).

ETIOLOGY.

The predisposing and exciting causes of tubal, ovarian and tubo-ovarian hernias are shown by the analysis of the collected cases to be the same as those of other hernias in the female. The persistence of the canal of Nuck is an etiological factor of the greatest significance in the causation of inguinal hernias. The canal of Nuck, the homologue of the processus vaginalis peritonei in the male, is a peritoneal diverticulum accompanying and adhering intimately to the round ligament, descending in some cases as far as the insertion of that ligament in the labium majus. This peritoneal process, whose dates of origin and disappearance are not accurately known, is usually found completely obliterated at birth; it may close after birth; it may even persist throughout life.

When the canal of Nuck is only partially or completely unobliterated, it forms a potential hernial sac, and is conceded to be the most important congenital predisposing cause to inguinal hernia formation. It is a matter of common knowledge that preformed sacs are not of infrequent occurrence in the inguinal region. They have rarely been found in other hernial regions. A sudden or forcible increase in intra-abdominal pressure, such as can be determined by muscular effort, by a misstep in an attempt to save one's self from falling, can lead to hernia formation by causing the irruption in a

preformed sac of a tube, an ovary, or a tube and ovary. As during infancy, the internal genitalia can neither be displaced by their physiological activity which is nil nor by the development of pelvic tumors (rare during early childhood), nor by muscular effort, it follows that hernias of the uterine appendages, at that period of life, are due to such congenital anatomical defects as facilitate tubal, ovarian, or tubo-ovarian displacement.

Though, as an etiological factor in the production of hernias, the existence of hereditary predisposition is denied by some authors, to us, the influence of heredity appears positive. Hernia being a malformation often due to developmental arrest, such as non or incomplete obliteration of the processus vaginalis peritonei, non-obliteration of umbilical ring, etc., it is subject to hereditary transmission. Berger says that the analogy of structure known to exist between ascendants and descendants manifests itself in various ways: Featural resemblance, like pelvic capacity and obliquity; like ligamentous and aponeurotic resistance; like width and narrowness of orifices through which hernias may escape, analogous muscular development of abdominal wall, etc. It is reasonable to assume that like structural characteristics beget a like predisposition and a like resistance to hernia development. In Morgan's case (54) of congenital tubo-ovarian hernia, the patient's brother had died of strangulated inguinal hernia; in Dorr's case (55) of irreducible left inguinal tubo-ovarian hernia, the patient's grandfather and father both had hernias. Among other etiological factors should be mentioned:

1. All conditions associated with increased mobility of the uterine appendages:

- a. Lengthening of the broad ligaments consecutive to repeated pregnancies. Owing to its loose attachment to the broad ligament, the position of the ovary is easily affected by the physiological or pathological movements and displacements of the pelvic organs.

- b. Pathological relaxation of the ligaments due to puerperal sub-involution. As a cause of the various uterine displacements, pregnancy is an important factor.

- c. Abnormal length of the broad, ovarian, and infundibulo-pelvic ligaments. Lockwood and others look upon abnormal length of the mesentery of the herniated organ as the chief cause of ovarian hernias. The opinion that lengthening and undue relaxation of the infundibulo-pelvic and ovarian ligaments are responsible for many hernias of the uterine appendages, has been expressed by a number of observers.

d. Relaxation of the other tubal, ovarian, and uterine ligaments. Pelvic tumors, uterine fibroids and other pathological states associated with marked increase in the volume of the uterus, not infrequently, determine a relaxation of the infundibulo-pelvic ligament.

2. All conditions that tend to increase the intra-abdominal pressure.

a. Sudden increase of the intra-abdominal pressure leads to hernia formation by overcoming the resistance offered by one or another of the weak points of the abdominal wall. Sudden increase of the intra-abdominal pressure may lead to the irruption of a tube, ovary, or tube and ovary in the sac of an old enterocele. Thus, in 45, an inguinal ovarian hernia appeared after a fall; in Broca's case of bilateral tubo-ovarian inguinal hernias, the hernia on the left side appeared after a coughing spell (10).

b. Occupations necessitating repeated muscular efforts associated with increased intra-abdominal tension, as the lifting or pushing of heavy weights, etc.

c. Physiological or pathological states which distend the abdominal cavity, which stretch the abdominal parietes, and widen the orifices normally present in the muscular and aponeurotic layers of the abdominal wall. Enteroptosis, obesity, abdominal tumors, ascites, pregnancy, etc., can be regarded as predisposing and exciting causes to hernia production. Pregnancy is by far the most important of all the conditions that increase intra-abdominal tension. Hernias are of far more frequent occurrence in women that have born children than in those who have remained sterile. Gestation acts in various ways: As it progresses, the position of the internal genitalia is changed and uterus, tubes, and ovaries ascend above the pelvic strait. Pregnancy increases the mobility of the uterine appendages, distends, weakens, and attenuates the abdominal parietes; it stretches, widens and dilates the hernial orifices, and abnormally lengthens the broad ligament. Gestation further predisposes to hernia formation by loosening the subperitoneal connective tissue, relaxing the mesenteric and other means of visceral fixation, and altering the intra-abdominal capacity. The expulsive efforts of delivery also exert an undeniable etiological influence in hernia formation. Some of the hernias were first noticed after childbirth (32, 33, 56). After delivery, pre-existing hernias often show an increase in volume. Souligoux's case (43), an acquired tubo-ovarian hernia, showed after each pregnancy an increase in size.

3. All conditions which weaken the abdominal wall. A hernia can occur wherever the parietal peritoneum is not sufficiently supported by the transversalis fascia and the other structures of the abdominal wall.

a. Acute or chronic diseases debilitating the organism, especially such as cause great emaciation. Emaciation weakens the resistance of the fibrous layers, dilates the orifices in the abdominal aponeuroses, rarifies the pelvic connective tissue, facilitates the gliding of the parietal peritoneum upon the underlying tissue and thus favors the formation of a hernial sac (57).

b. Obesity weakens the abdominal wall and increases the intra-abdominal pressure. The fat present in the abdominal wall, in the omental, mesenteric, and other peritoneal folds explains why obesity plays such a rôle in hernia development. Pro-peritoneal lipomata by exerting traction on the peritoneum and by insinuating themselves through gaps in the abdominal wall can lead to the formation of peritoneal diverticula. These diverticula, once constituted, are potential hernial sacs. Not infrequently the bulk of the hernial swelling is made up of a lipoma behind which the peritoneum is drawn outward in a funnel-shaped manner.

c. Traumatism (58). Most often the traumatism does not cause the hernia, but only reveals its existence. Among traumatisms must be mentioned abdominal operations and their sequelæ; pathologic adhesion of viscera or omentum to the anterior parietal peritoneal wall near a hernial opening may act as a predisposing cause.

d. Enterocoeles, epiploceles, and entero-epiploceles. Garrigues is of the opinion that in one of Broca's cases and also in Poirier's case, the herniated uterine adnexa or adnexæ had glided into enterocele sac.

e. Feeble development or atrophy of the aponeurosis of the transversalis muscle, and of the conjoined tendon. This factor is an important one in direct inguinal hernia.

f. A shortening of the round ligament of the hernial side is not rare. Authors are not agreed as to whether this shortening is primary or secondary.

HERNIAL SACS.

Congenital hernias have sacs of pro-natal formation. That the canal of Nuck remains patent in many cases long after birth, even into adult life, has been proven by a large number of investigators. Acquired hernial sacs are formed of parietal peritoneum forced by

intra-abdominal pressure through some congenital or acquired defect in the abdominal walls.

In the female, the following anatomical characteristics are strongly suggestive of the congenital sac. Great vascularity, absence of sub-serous fat, folds, valvular or diaphragmatic constrictions, cyst-formations, scar-like induration of the wall, etc. In congenital inguinal hernias, it is also noted that the round ligament is intimately adherent to the sac. This intimate adherence of the round ligament to the sac has also been observed in some acquired hernias, as in case 33b, in which "round ligament was thoroughly adherent to sac." In case 59, a congenital hernia, the sac was accompanied posteriorly and internally by the fibres of the round ligament.

As we see, the sac results from the bulging outward of the parietal peritoneum without solution of continuity. It consists of a neck, body and fundus. The neck, the portion of the sac situated within the hernial orifice; the body, the main portion of the protrusion, and the fundus, the lowest part of the sac. Of these three, the neck is the most important. It is through it that the general peritoneal cavity communicates with the hernial sac cavity. It may be the site of constriction. The fibrous envelope of the sac is due to the condensation of the fibrous layers which the hernia in developing pushes forward.

The internal surface of the sac, whether the latter be congenital or acquired, has all the peculiarities of serous membranes. When exposed to irritation, pressure, circulatory disturbances or when inflamed, it shows a tendency to secrete an excess of serum, to form exudates, and to undergo degenerative structural changes. Irreducible hernias are most frequently due to an adhesive inflammation involving either the sac or the sac and its contents. The opposing saccular surfaces may adhere and may through the organization of inflammatory deposits become united. Inflammation of a hernial sac may lead to any of the following conditions: Formation of inflammatory bands within the sac cavity, hydrocele of a hernial sac, partial or complete obliteration of the sac, irreducibility of hernial contents previously reducible, etc.

In the female encysted inguinal hernias result from partial closure of the canal of Nuck, the peripheral portion of which is transformed into a cyst in which a developing hernia prolapses or from the sinking of a hernia in a pre-existing hernial hydrocele.

There is really no sacless hernia; but the herniated viscus may be an organ only partially covered with peritoneum. For example, the

cæcum in about seven per cent of individuals is covered with peritoneum only on its anterior and lateral surfaces, while posteriorly it is loosely attached by connective tissue to the posterior abdominal wall.

In sliding hernias, the anterior and lateral portions of the sac are, as in ordinary hernias, derived from the parietal peritoneum, while the remaining portion is formed by the anterior surface of the herniated cecum, sigmoid, bladder or Fallopian tube.

Hernial sacs may be dome-shaped, cylindrical, digitiform, sacculated, or irregular; may show constrictions with intervening dilated portions. In case 60, sac was irregularly pouched and distended with fluid. Sacs vary in size. Some are small, some are large. They enlarge at the expense of the parietal peritoneum, that membrane being capable of very great gradual extension. Most femoral sacs are small and not infrequently are embedded in a mass of fat. The sac in recent hernias may be very thin. In children and in young infants, sac is extremely thin.

HERNIAL FLUID.

The reporters not infrequently state that fluid of some nature or other was present in the hernial sac. The fluid may be muco-purulent (31), serous, sanious, purulent, or fetid in character (61). Thus, in cases 40 and 47, fluid and clotted blood was present in the hernial sac. Jordan's case (40) was a case of ruptured ectopic pregnancy occurring in a left inguinal tubal hernia. The sac contained in addition to the herniated organs a ruptured ovum and an eleven to twelve week's old fetus. In case 27 there were removed from a right inguinal hernial sac a tube, a remnant of an ovary and six pounds of white liquid.

HERNIAL SAC CONTENTS.

TUBAL HERNIAS.

The tube, either in part or in its entirety, may be the sole content of the hernial sac. In Dorr's case (55), only a few centimeters of abdominal end of tube were in hernial sac; in Gladstone's case (12), only the middle portion; in Kousmine's case (58), only the external half. In Lejars' case (3), a Fallopian tube and a portion of the urinary bladder were present. In Maydl's case (62), there was present a tube and the appendix vermiformis; in this case, tube had slipped into the sac only by its middle portion which was bent into a loop so that the free end remaining in the abdomen was the only part strangulated. In Planson's case (63), the herniated portion of

the tube was its middle portion; both uterine and abdominal ends were in the abdominal cavity.

As associated hernial contents, a portion of the urinary bladder (3), normal intestine (21), gangrenous intestine (64, 65), and omentum (21, 29b, 37, 31, 66) were noted.

The herniated tube may be normal and free (37a, 67); may be adherent to sac (63); may be strangulated (3, 50, 64, 68, 69, 70); may show inflammatory lesions (37c, 66); may be cystic (55, 62); may be the seat of a pyosalpinx (30).

OVARIAN HERNIAS.

The ovary may be the only content of the hernial sac, or be associated with a cystic parovarium (46, 71), with omentum (38, 72), with intestine (33, 39, 73), or with a rudimentary uterus (5). The herniated ovary is reported as to have been normal (74), enlarged to twice its normal size (75), infiltrated with blood (76); the seat of a large hematoma (77), adherent to sac (33, 78, 79, 80), cystic (46, 75, 81, 82), and to have presented areas of suppuration (83). In cases 48, 79, 84, it showed gangrenous changes. The herniated cystic ovary, in Fargas' case (38), had the volume of a man's head and showed the typical structure of a reticular cyst of the ovary. In Parsche's case (85), the herniated ovary was a multilocular ovarian cyst containing a thin odorless fluid; it measured 6 to 4 cm. The hernial contents in Seymour's case (34), was a spindle-cell sarcoma of the ovary. In Way's case (86), the removed mass showed the elements of a fibromyoma of the ovary.

TUBO-OVARIAN HERNIAS.

Hernias of the tube and ovary constitute the largest number of hernias of the uterine appendages. As associated hernial contents may be mentioned: Urinary bladder (87), Meckel's diverticulum (2), the appendix vermiformis (2, 88, 89), omentum (1, 43, 44), intestine (2, 6, 22, 40, 42, 43, 44, 45, 53, 61, 88, 90, 91), the uterus (14, 16, 17, 42, 53, 87, 92, 93, 94). In Bucura's case (90), a pouch of peritoneum adherent to the hernial sac contained a bladder diverticulum. Some of these hernias had varied contents. In Bordeau's case (35), sac contained both tubes and ovaries and the uterus. In Legueu's case (7), there was found in the hernial sac an infantile uterus, two tubes and one ovary. In case 99, the sac contained one ovary, the tubes and the uterus. In Le Nouène's case (95), the hernial contents proved to be the uterus and the right and the left

suppurating adnexæ. Defontaine's case (96), was a hernia of the entire utero-ovarian apparatus.

We know of only two cases in which gestation occurred in an inguinal hernial sac; both were tubal pregnancies. In Jordan's case (40), the ovum laid among loops of gut at the bottom of the hernial sac. The other case was operated on by Dr. Carl Beck of this city.

The herniated organs may be normal (11a, 97), may show slight or marked pathological changes. The displacement of a tube or of an ovary into a hernial sac is unfavorable to its anatomical and functional integrity. In a hernial sac, these organs are exposed to repeated slight traumatisms and to circulatory disturbances. The herniated ovary frequently undergoes cystic changes (4, 8, 16, 22, 36, 41, 49, 56, 87 (three cases), 91, 98, 99, 100); may show atrophy (90, 101, 102); may show enlargement (32, 87, 103) (ovary enlarged six-fold); may be undersized (15).

In the following tubo-ovarian hernias, the herniated tube was the seat of suppurative salpingitis (95b), of abscess (49), of tuberculosis (104). In Guinard & Dufefoy's case (32), the tube was sausage-shaped and contained three abscesses separated from each other; the accompanying ovary was enlarged. Tube may be adherent to sac by an inflammatory band (105b).

We must not forget to state that a tube and ovary present in a hernial sac do not always have the same reciprocal relation that they have in the abdominal cavity, and that the pathological changes which they show may antedate their displacement into a hernial sac.

REDUCIBLE HERNIAS.

In reducible hernias, and at first practically all hernias are reducible, the hernial contents either return spontaneously into the abdominal cavity when the patient assumes the recumbent posture or they can be manipulated back, with more or less difficulty, but without a cutting operation, into the cavity from which they escaped. Even in reducible hernias, the sac early contracts adhesions to neighboring tissues and becomes irreducible. The terms reducibility, irreducibility, torsion and strangulation have reference only to the hernial contents and not to the sac.

Reposition, spontaneous or manual, may be temporary, may be permanent. Many reducible hernias reappear as soon as the standing posture is assumed; others, to reprotrude, require more or less muscular effort on the part of the patient.

IRREDUCIBLE HERNIAS.

When the contents of a hernial sac cannot in their entirety be manipulated back into the abdominal cavity, the hernia is said to be irreducible, provided that there is not any or but a very slight interference with the blood supply of the herniated organ or organs, and that there is no disturbance of function. If irreducibility, and both functional and circulatory disturbances are present, the hernia is designated as strangulated. Irreducibility, partial or complete, predisposes to complications of a serious nature: Inflammation, incarceration, strangulation and torsion.

The irreducibility of hernias is dependent upon one or more of the following factors:

a. Difficulties incident to manipulating a small movable body such as the ovary through a small opening.

b. Relative narrowness of the hernial canal: Femoral, inguinal, etc. In Tscherning's case (106), reposition was prevented by narrow hernial ring.

c. Sudden increase in size of hernia resulting from some unusual muscular effort.

d. Changes in the hernial contents: Increase in bulk from deposit of fat, from cyst formation in mesentery, in omentum from inflammatory or neoplastic changes.

e. Adhesions of inflammatory origin:

1. Between sac and contents (29, 37, 39, 40, 56, 59, 63, 78, 80, 89, 99, 101, 107, 108, 109, 110).

2. Between the different contents (72); ovary intimately adherent to tube (104).

Among the causes of inflammatory adhesions may be mentioned: Inflammation during intra-uterine life; traumatism; strangulation that has not been severe enough to determine gangrene; long continued pressure due to wearing an ill-fitting truss; inflammation of sac, of hernial contents, or of both. At times, the adhesions form without producing symptoms. Adhesions not only cause irreducibility, but also predispose to strangulation, and in the hernias under consideration to the accident known as torsion.

f. Large volume of the hernia. In Fargas' case (38), the herniated cystic ovary had the size of a man's head. In Rosanoff's case (53), the hernial sac contained ovary, tube, uterus and some intestinal loops. The hernial ring easily admitted operator's fist.

g. Sliding hernias (Hernies par glissement). In hernias of this nature one of the contents is a viscus not entirely surrounded by

peritoneum and therefore not freely movable, but partially fixed. The urinary bladder, the Fallopian tube, the cecum, and the sigmoid colon are the most common contents of sliding hernias. In these hernias the protruded viscus or viscera bear the same relation to the hernial sac that they bore to the peritoneum when normally placed or previous to their displacement. Another characteristic of sliding hernias is that the peritoneal covering of one of the herniated viscera or of the herniated viscus enters into the formation of the hernial sac.

The irreducibility of a hernia of the uterine appendages is due in some cases to the presence as associated hernial contents of the urinary bladder, of the cecum, or of the sigmoid. In other cases, the irreducibility is due to the fact that the layers of the broad ligament, as they leave the Fallopian tube, enter into the formation of the hernial sac. Wiart's case (20), was a sliding inguinal hernia of the left tube; "The tube was adherent by a meso to the posterior portion of the hernial sac."

STRANGULATED HERNIAS.

All strangulated hernias are irreducible. In addition to irreducibility, they present a constriction of the hernial contents of such a degree as to seriously interfere with the circulation of the blood in the herniated organ or organs. "If the pedicle of a tumor is tied off or if a finger is surrounded tightly by a string, the parts distal to the ligature do not become inflamed; stasis and gangrene result" (Alberts). The same primary changes occur in the contents of a strangulated hernia; the inflammatory changes are secondary to the circulatory disturbances. There is interference first with the venous circulation; then, with the arterial circulation. As a result of this interference with the circulation, we have a serous exudate the amount of which depends upon the degree and duration of the strangulation and also upon the extent of the secreting surface. The sequence of events is as follows: Congestion (42, 111), stasis (112, 113, 114), serous exudation, then inflammatory phenomena and gangrene (115). Strangulation of a herniated tube or ovary is not as dangerous a complication as strangulation of a herniated loop of intestine.

Some of these strangulated inguinal hernias were congenital (70, 76, 84, 111, 112, 113, 114, 115); six were acquired (3, 22, 33, 42, 44, 92). Strangulation can occur at any age irrespective of type

of hernia or of hernial contents. Gaudier's (70) patient was four months old: Ogé's (42) patient was seventy-one years of age.

As hernial contents can be mentioned the following organs: Fallopian tube (70), ovary (76, 84), tube and ovary (22, 111, 112, 113, 114, 115), tube and a portion of the urinary bladder (3), tube and a loop of small intestine (65), ovary and about twenty inches of intestine (33), tube, ovary, intestine and omentum (44), uterus and adnexæ of one side (9, 92), loop of intestine, uterus and left adnexæ (42).

Strangulation at times is due to constricting bands present either in the sac itself or in the immediately surrounding tissues. Though, usually, there is but one constricting point there may be several constricting points in one and in the same hernia. In Gaudier's (70) and Hermanns' cases (113), the hernial ring was the constricting agent. "Strangulation in twenty-four strangulated hernias was due in twenty-three cases to a tight external ring" (116).

The symptoms given by these strangulated inguinal hernias were those of inflamed hernias. In only five of these cases (33, 42, 44, 65, 76) were symptoms of intestinal obstruction present, and in four of these the sac contained strangulated intestine. Churchill's case (76) of strangulated ovarian hernia was the only one in which, in the absence of strangulated intestine, symptoms of ileus were present.

All these strangulated hernias were operated; all but one (65) recovered. This fatal case was operated upon while patient was in extremis.

TORSION OF THE PEDICLE.

This complication, peculiar to ovarian and to tubo-ovarian hernias, is not of unusual occurrence. As far as we have been able to determine, torsion of the pedicle has been observed only in irreducible congenital hernias of the inguinal type. In one case, however, in which this accident occurred, the hernia was partly reducible (77).

The two youngest patients were four (24) and eleven (117) weeks old respectively; the oldest, a poorly nourished child, was fourteen months old (118). All the other patients were less than one year old. The right and left side are involved with about the same frequency. The occurrence of this accident is favored by the mobility of the ovary and the slenderness at this period of life of the pedicle of the herniated organ or organs.

The pedicle, usually composed of the Fallopian tube, broad ligament and contained vessels (54, 117), may have made a half-turn

upon itself (28, 98, 119); may be twisted twice (77), thrice (120, 121), or several times upon its axis (122). The pedicle may be twisted in any part of its course, "just behind the external abdominal ring (123), "twist at internal abdominal ring" (124).

If unrelieved, torsion of the pedicle determines in the hernial contents anatomical changes similar to those caused by strangulation. The impeded return of blood in the veins leads to congestion and swelling of the organ or organs below the twist. There are noticed in the hernial contents, the following circulatory disturbances: Congestion (73, 117), stasis (124), thrombosis, vascular rupture (ovary seat of large hematoma) (77), and interstitial hemorrhages (122). The interstitial hemorrhages and the serous transudates lead to tissue dissociation. In Heegard's case (24), the ovarian stroma was infiltrated with red and white blood corpuscles. Gangrene of greater or less extent frequently results. In Grunert's and Hab's cases (120, 121), the herniated organs were in a state of beginning gangrene; the hernial contents showed gangrenous foci (79, 103, 118, 123).

In torsion of the pedicle, the amount, odor and color of the hernial fluid depends upon the tightness and duration of the twist and upon the extent of the gangrenous changes. The fluid present in the hernial sac may be serous (24, 122), may be blood-stained, (54, 117, 123, 125), dark colored (98), reddish-brown (118); dark fluid blood was present in the hernial sac in Rigby's case (124).

Torsion of the pedicle gives rise to symptoms somewhat analogous to those of strangulated intestinal or omental hernias. In fact, the condition has frequently been diagnosed a strangulated intestinal hernia. In Mumby's case (73), after enlarging the hernial ring, the herniated ovary and intestine were returned to the abdominal cavity. The herniated ovary was removed in cases 77, 79, 81. In all the other cases, the herniated tube and ovary were ablated. All these patients except one (77) recovered from the operation and from the condition. Case 77 died three weeks later from bronchopneumonia.

POST-OPERATIVE VENTRAL HERNIAS OR HERNIAS IN ABDOMINAL SCARS.

The protrusion of parietal peritoneum with stretching of the cicatrix over it, may occur after any operation or other penetrating wound of the abdominal walls except those of very small dimensions.

Though these hernias may occur in any part of the abdominal wall, they are located almost always either in the median line or in the region of the appendix. Owing to the employment of improved operative technique, and to the more rigid observance of the

requirements of surgical asepsis, post-operative hernias are decreasing in frequency.

There are two types: In one, there is a uniform distension of the cicatricial tissue, producing a condition somewhat analogous to separation of the recti muscles; in the other, the hernia is due to the giving way of weaker portions of the scar.

The main predisposing etiological factors are:

1. Long incisions.
2. Faulty closure of abdominal wounds.
 - a. Placing sutures at too wide intervals. Slipping of knots.
 - b. Use of catgut suture material which is prematurely absorbed, that is, which is absorbed before organic union of the approximate tissues has been effected.
 - c. Faulty coaptation of margins of divided tissues.
 - d. Exclusive employment of through and through sutures.
- Laparotomies in which the different layers of the abdominal wall have been sutured separately show a much smaller percentage of hernias than those in which the abdominal wound has been closed only by through and through sutures.
3. Operations for suppurative processes which of themselves require, for healing, that the abdominal wound be maintained open for a considerable period of time.
4. Drainage.
5. Disturbed wound-healing. Imperfect asepsis. Suppuration.
6. Failure to wear for some months after recovery from operation, a well-fitting abdominal binder.
7. Too early pressure upon the scar.
8. Pregnancy.

The only ventral hernia of the uterine appendages which we could find is a tubo-ovarian hernia (8) in an abdominal scar resulting from the opening and prolonged drainage, ten years previously, of an appendicial abscess. The scar was about six inches in length. Cullen, to cure this case, resected the entire cicatrix, loosened the adhesions of the omentum to the ovary; then removed the herniated ovary and hydro-salpinx and followed this by closure of the abdominal wound without drainage. A satisfactory recovery was obtained. The sac was incomplete for a considerable distance; the ovary lay directly beneath the skin.

The frequency of post-operative hernias will be lessened if operators, in addition to keeping in mind the etiological factors, avoid cutting nerves in their lines of tissue division; if they em-

ploy, when possible, "gridiron" incisions and supplement their through-and-through sutures by "layer by layer" sutures.

GLUTEAL, SCIATIC, OR ISCHIODIC HERNIAS.

This is a very uncommon condition; in the medical literature of the last one hundred and fifty years, only twenty-three cases of ischiadic hernia are recorded (E. Koeppl (126)). This class of hernias escape from the abdominal cavity by way of either the greater or the lesser sacro-sciatic foramen. There are three varieties: The suprapyriformis, the infrapyriformis, and the spinotuberosa. These hernias may be congenital or acquired, may occur on either side of the body and are subject to all the complications of hernia in general. Thirteen of the cases on record were observed in women. Schilbach's case of "hernia ischiadica ovarii dextri incarcerati spino-tuberosa" is the only case on record of an ischiadic hernia making its exit through the lesser sacrosciatic foramen. The diagnosis was first made at the autopsy table. During life, there had been genital hemorrhage and symptoms of ileus. At the post-mortem examination, the ovary was found in the hernial sac, the tube and broad ligament being caught in the hernial ring.

We found only two cases of ischiadic hernia of the uterine appendages. Both were acquired hernias of the right tube and ovary, occurring in multiparous patients. Both were subjected to operation and recovered.

Woelfler's case (126), is interesting in that it was successfully subjected to an operation for radical cure. The hernia, an infrapyriformis one, emerged like all others of its type along the lower border of the pyriformis muscle in close relation to the internal pudic, inferior gluteal and sciatic nerves and vessels. For the previous two years, the patient had had attacks of pain radiating along the course of the sciatic nerve, and abdominal suffering associated with nausea and, at times, vomiting. In the right gluteal region, there could be palpated below the muscles, a globular, fluctuating, fist-sized, non-reducible swelling from which, at one time, there was removed by aspiration fifty cubic centimeters, and, at another time, five hundred cubic centimeters of dark reddish fluid containing much albumen, red blood corpuscles and leucintyrosin crystals.

The following operation was performed: An eight centimeter long incision, parallel to the course of the fibres of the gluteus maximus, was made over the summit of the hernial swelling. The muscle fibres were separated; the hernial sac exposed, isolated and opened.

It contained the ovary and the end of the tube. The sac contents were ablated; the resulting stump reduced in the abdominal cavity. The sac was then ligated and cut off; after which, the operator closed the hernial orifice by approximating the pyriformis muscle to the lesser sacro-sciatic ligament.

OBTURATOR HERNIAS.

In obturator hernias, the herniated viscus or viscera, always, escape from the abdominal cavity by way of the obturator or subpubic canal.

These hernias, though less infrequent than ischiadic hernias, are nevertheless uncommon; not more than two hundred cases are recorded in the medical literature. Owing to the greater capacity and greater transverse diameters of the female pelvis, to pregnancy (45 was a 4-para), and to other factors, obturator hernias are found more frequently in the female, and usually in elderly females. The cases which we found were 66, 68, 72, 78 and 87 years respectively.

They are usually small; are more frequent on the right side (12, 26, 45); may be unilateral or bilateral; may co-exist with hernias of a different type. They may be reducible (12, 26), irreducible (21), or strangulated (45, 61).

Piqué & Poirier recognize three main anatomical varieties of obturator hernia. In the first variety, the most common, the hernia follows the entire course of the obturator canal, appearing as a swelling in front of the external orifice of this canal. In the second variety, the hernia escapes from the abdominal cavity through the pelvic orifice of the subpubic canal, but following the course of the inferior division of the obturator nerve does not traverse the canal's entire length, and makes its exit by passing between the superior and middle bundles of the obturator externus muscle. In the third variety, the hernial protrusion also enters the pelvic orifice of the obturator canal, but becomes lodged between the obturator membrane and the obturator externus muscle.

In the first two varieties, the pectineus muscle overlies the hernial swelling. Lickley's case (26), belonged to the first variety; the posterior surface of the flask-shaped hernial sac rested on the obturator externus muscle, the thick upper border of which lay immediately below and behind the sac's neck. The strong aponeurosis underlying the pectineus muscle bound down the sac anteriorly. Gladstone's case (12) belonged to the third variety; the sac had escaped from the pelvis through the internal orifice of the obturator canal

and lay imbedded in a mass of fat beneath the obturator externus muscle.

Objective symptoms are frequently absent. When a swelling is visible and palpable, it is usually of small volume and is located in the most internal portion of Scarpa's triangle, somewhat resembling a femoral protrusion. It is, however, non-pedicated and does not extend in the direction of the crural canal. In Picqué & Poirier's case (21), a small spherical egg-sized tumor was present in the most internal portion of Scarpa's triangle. In Rogner Gusenthal's case (61), a swelling in upper part of Scarpa's triangle is noted. "Howship-Romberg's phenomenon: "Neuralgic pains and cramps along the course of the obturator nerve is an important symptom. However, it is not a constant symptom and has been observed infrequently in other conditions, such as osteomyelitis of the pubic bone, pelvic suppurations, etc. It was present in 21, 45, 61. In suspected cases, one should always determine whether there is increased pain when the obturator externus is put under tension: Abduction and rotation inward of the thigh.

Vaginal examination is important. The internal orifice of the subpubic canal is accessible to the vaginal hand. Picqué (21) felt, with the examining vaginal hand, a cord extending into the subpubic canal and could palpate the abnormally enlarged internal hernial orifice.

In Lickley's and Schopf's cases (26, 45), the body of the uterus was deflected towards the inner hernial opening.

The high mortality which has followed operative treatment for strangulated obturator hernias is due to various factors:

- a. The advanced age of the patients.
- b. The non-recognition of the condition until serious or fatal anatomical lesions had developed.
- c. Unfavorable influences under which the operations were performed.

Two routes are advised for the treatment of obturator hernias: The abdominal route and the obturator route. In the obturator route, the following steps are employed:

1. An incision 8 cm. long is made about 3.5 cm. internal and parallel to the femoral artery.
2. Separate with a grooved sound the internal border of the pectineus muscle from the outer border of the adductor brevis and adductor longus muscles.
3. If necessary, divide a few of the fibres of the pectineus

muscle close to their insertion on the pubic bone, so as to facilitate digital exploration of the obturator region.

4. Expose, isolate and open sac; determine its relation to the obturator nerve and vessels, after which nick constricting point, if the hernia be strangulated, and reduce or ablate hernial contents.

5. Closure of wound.

FEMORAL HERNIAS.

Hernias which in their escape from the abdominal cavity pass between Poupart's ligament and the horizontal ramus of the pubis and sooner or later protrude in Scarpa's triangle, are called femoral hernias. All the crural hernias collected belong to the type known as common femoral hernias. Common femoral hernias escape from the abdomen through an orifice bounded anteriorly by the most internal portion of Poupart's ligament; posteriorly, by the horizontal ramus of the pubis; externally, by the femoral vein and the sheath of the femoral vessels; internally, by Gimbernat's ligament. They descend along the most internal compartment of the femoral sheath and ultimately emerge through the saphenous opening. These hernias are contiguous to the femoral vein which always lies external, and they carry along in their progress through the crural canal a mass of condensed areolar tissue, known as the septum crurale. They show a greater tendency to expand upward than downward because the cribriform fascia is less adherent to the upper margin of the saphenous opening.

The small number (sixteen cases) of femoral hernias which we were able to collect, as compared to inguinal hernias, confirms the now accepted but previously disputed fact that, in the female, inguinal hernias are of more frequent occurrence than femoral hernias. All these femoral hernias were of the acquired type; it is known that congenital femoral hernias are pathological rarities. In thirteen cases, the patients, at the time that they came under observation, ranged in age from forty to seventy-five years; the remaining patients were thirty-six and thirty-seven years old respectively (50, 58, 60). Femoral hernia is essentially a hernia of adult life. Either side of the body may be involved. All our cases were unilateral. The tendency to double femoral hernia is less than that to double inguinal hernia. In one case, the side affected is not stated; of the remaining fifteen, five were left-sided and ten were right-sided. All femoral hernias irrespective of contents or of sex of bearer are of more frequent occurrence on the right side (Wernher, Macready, Berger).

The tubal hernias contained the oviduct either in part (29b, 60, fimbriated end of tube, 58, external half of tube) or in its entirety (37, 66, 68), alone or associated with intestine (29a, 64, 69), omentum (66), or both. In Maydl's case (62), the hernial sac contained blood-stained fluid, the appendix vermiformis and a portion of the Fallopian tube. The strangulated portion of the tube was within the abdominal cavity. The presence of the appendix vermiformis in a femoral hernial sac is rare. Coley states that in 2,200 cases of hernia operated upon from 1890 to March, 1908, in the Hospital for Ruptured and Crippled, the appendix vermiformis alone was found in ten, the cecum and appendix together in seven. In not a single one of Coley's cases was the appendix found in a femoral hernial sac (W. B. Coley, *Keen's Surgery*, 1908, Vol. 1, p. 78).

These hernias may be reducible (58), irreducible (29—two cases—30, 37, 60, 72, 78) or strangulated (48, 50, 62, 64, 66, 68, 69, 85). Case 69 had had previous attacks of strangulation which had yielded to taxis. It is thus seen that half of these hernias were strangulated. Strangulation is a frequent complication in femoral hernias; these hernias are small, their importance underrated and truss treatment very imperfect. Strangulation can occur at any one of the following sites:

- a. Internal femoral ring.
- b. Margin of Gimbernat's ligament.
- c. Margin of the saphenous opening.
- d. Meshes of the cribriform fascia.
- e. Irregularities in the hernial sac.

We find the symptoms, pain and tenderness, noted in 48, 60, 66, 72, 78; menstrual disturbances in 58 and 68. In the strangulated cases the symptoms were more those of inflamed than of strangulated hernias. In case 58, on bimanual vagino-abdominal examination, the deviation of the uterus to the front and to the left was demonstrable. Impulse on coughing is an inconstant symptom; it was absent in case 37.

The following operations were performed:

1. Amputation of fimbriated end of tube (29b). This hernia had previously been treated by injection, but had recurred.
2. Incision of hernial swelling and creation of an artificial anus (65).
3. Ablation of tube (50, 68).
4. Ablation of ovary (48, 78).
5. Ablation of tube and ovary (37).

6. Excision of hernial sac and return of tube to abdominal cavity (29a, 60, 66, 69).

7. Removed tube and ovary and resected gangrenous intestine (64).

In case 58, a cystic dilatation of the Fallopian tube forming a fist-sized hernia below a line extending from the pubic spine to the anterior superior spine of the ilium, the hernial mass was incised and two pounds of clarified purulent fluid evacuated. Drainage was employed. In Maydl's case (62), the appendix and the tube and ovary were removed. In Parsche's case (85), the hernial contents was a multilocular ovarian cystoma 6 to 4 cm.; it was removed. In case 72, the procedure employed is not stated. All but two cases recovered. The two deaths were 64 and 65. In both, the hernial sac contained gangrenous intestine and the patients were moribund at time of operation.

Truss-treatment of femoral hernia is notoriously unsatisfactory and is considered as being only palliative and not at all curative. In femoral hernias, on account of motions of thigh, it is difficult to apply, and especially to maintain pad-pressure in a position conducive to closure of the hernial openings.

By operation, a radical and a permanent cure can be obtained. The results are better in small than in large hernias; in recent hernias better than in those of long standing. We urge that all femoral hernias of the uterine adnexæ be subjected to an operation for radical cure. It is the only rational and efficient treatment of crural hernias. Many operative procedures have been devised, recommended and employed in the radical cure of femoral hernias; not one has, up to this time, found universal acceptance. Ochsner always opens the sac, and then reduces the hernial contents. After isolation and high ligation of the sac, he removes it as well as the fat which surrounds the canal and fills the region of the femoral ring. He considers these few simple steps ample and efficient for cure. He says: "It is a well-known fact that it is practically impossible to keep a circular opening in any part of the body from closing spontaneously unless it is lined by a mucous or a serous membrane." (A. J. Ochsner, *Femoral Herniotomy*, J. A. M. A., 1906, Vol. 47, p. 751.) Coley, whose clinical experience with the treatment and cure of hernia is greater than that of any other living American surgeon, supplements to high ligation and ablation of the hernial sac with the thorough removal of all extra-peritoneal fat the following step: He introduces a purse-string suture of kangaroo tendon in such a way as to bring the floor

of the femoral canal in contact with the roof. Coley states: "The results of this purse-string method have been so nearly ideal that there is seldom need of resorting to more difficult and complicated methods."

INGUINAL HERNIAS.

Hernias which escape from the abdominal cavity, either through the internal or external inguinal fossæ, and when complete emerge upon the surface by way of the external abdominal ring, are known as inguinal hernias.

Of all hernias, they are the ones most frequently noted in the female.

There appear in the text only twenty-four hernias of the uterine appendages of one or other of the following types: Post-operative, ischiadic, obturator and femoral, as compared to one hundred and ninety-six inguinal hernias, one hundred and seventy of which were unilateral and thirteen bilateral.

Inguinal hernias of the uterine adnexæ may be complete or incomplete (105). In the incomplete form, the hernia has not escaped beyond the external abdominal ring. Inguinal hernias may be right-sided or left-sided: Thirty-eight of our cases are definitely known to have been right-sided, forty-five to have been left-sided; in many cases, the side involved is not stated. They may be unilateral or bilateral; as previously stated, all the bilateral hernias of the uterine adnexæ, tubal, ovarian or tubo-ovarian, recorded in the medical literature of the last twenty years, were of the inguinal variety. They may be reducible or irreducible (over eighty of the inguinal hernias were at time of report irreducible). They may be strangulated or the seat of torsion. This last accident has only been observed in congenital inguinal hernias, the contents of which were irreducible.

Of the uncommon types of inguinal hernias there were only several. There was one direct hernia (44). This, especially in the female, is an uncommon form. The main characteristics of direct hernias are that the protrusion takes place by way of the internal inguinal fossa, that the neck of the sac is always to the inner side of the deep epigastric vessels and, in the female, that the round ligament is distinct from and to the outer side of the sac. Coley says that he has only seen one case of direct hernia in the female sex (116). We found three interstitial or intra-parietal hernias.

In Launay & Wiat's case (59a), the hernial sac was upon the anterior surface of the external oblique and extended from the ex-

ternal abdominal ring obliquely upwards and outwards towards the anterior superior spine of the ilium.

In Tubby's case (127), of interstitial inguinal hernia of both ovaries and both tubes, the prominent part of the swelling was found between the left internal oblique and transversalis muscles. All the other inguinal hernias were of the ordinary type, that is, external or indirect or oblique.

An ordinary or oblique inguinal hernia in its course through the inguinal canal (narrower in the female than in the male), is accompanied by the round ligament; as it escapes from the external abdominal ring, it appears in the upper portion of the labium majus, in which it descends to a greater or less extent.

Inguinal hernias vary in size and in form. They may be hazel-nut sized (128), walnut-sized (13, 37, 63, 75, 108, 123, 129), hickory-nut sized (76), plum sized (98), pigeon-egg sized (46, 118, 122), hen-egg sized (95, 107, 127, 130), goose-egg sized (19), fist-sized (9, 39, 47, 92), orange sized (41, 42, 89). Case 88 had the size of two fists. Inguinal hernias may be almond shaped (75b), ovoid (51, 127, 130), sausage shaped (47), pear shaped (93), pyriform (96), globular (124), or other forms too numerous to mention.

SYMPTOMS AND DIAGNOSIS.

Hernias of the uterine appendages present all the symptoms common to hernias in general. In some hernias of slow and gradual development, owing to the absence of symptoms, not uncommonly the patient ignores that he has a rupture. Some cases do not give rise to any symptoms (no clinical record, operating table, dissecting or autopsy-room discoveries). Some give rise to very slight disturbances. Many remain painless until the appearance of the menses and thus are first recognized at about the age of puberty. Pain may be absent during the entire course of a slowly developing hernia. In other cases, the hernial swelling may be so small as to be completely overlooked by a careless observer. Inspection, palpation, and percussion of the hernial regions are routine steps in the examination. In case 88 and 99b, the percussion note was tympanitic; in cases 24, 41, 59, 95, 99a, and 125, the percussion note was dull. After having demonstrated the presence of a hernia, the operator has to determine the type of hernia present and the nature of its contents. The existence of other malformations is to be ascertained as they may be of such a nature as to partially justify the sacrifice of healthy herniated organs.

Clinicians usually do not experience any difficulty in diagnosing

a hernia; at times, they are in doubt as to the type of the hernia present in the case at hand. In fatty individuals, the exact position of the hernial neck is difficult to determine. Obturator hernias are rare, and are found internal to the femoral opening; in femoral hernias, the swelling is found to be almost if not entirely below a line extending from the anterior superior iliac spine to the pubic spine (58); "Mass was below Poupart's ligament" (78). The peduncle of a femoral hernia lies immediately behind the tumor mass whereas in inguinal hernias it extends upward and outward. In inguinal hernias, such conditions as the following are present: "Fist-sized, sausage-shaped swelling which could be traced to right external abdominal ring" (47); "swelling was above Poupart's ligament" (130); "swelling occupied the whole left labium" (115); "small swelling in labium majus" (112); "swelling extended from internal abdominal ring to the left labium majus" (125); "hard tender swelling in right labium majus continued in the inguinal canal as a firm cord-like projection" (131).

In the female, the tumor mass caused by a complete oblique inguinal hernia, even of a moderate size, will cause a swelling extending into the labium majus (41, 42, 96, 98, 104, 106, 111, 115, 119, 120, 124, 125).

In some hernias of the uterine appendages, the patients complain of a feeling of weight and discomfort. In Cousin's case (51), an inguinal hernia of the right ovary, pressure upon the hernial swelling excited a sickening sensation. The special sensitiveness of the ovary is said not to appear before the age of puberty. The symptoms, "tenderness on pressure," we find frequently repeated (2, 21, 33b, 35, 60, 66, 78, 103, 127, etc.). Some of these hernias are painless (63), some are so painful as to interfere very much with the patient's well-being. In Way's case (86), locomotion was difficult. In Nassi's case (4), when patient stands and when she coughs, hernial swelling increases in size. Impulse on coughing is not infrequently noted. It is not, however, a constant symptom. It was present in cases 29, 32, 37b, 63, 67, 132. It was absent in cases 31, 117, 125, 133. These last four hernias were all irreducible inflamed inguinal hernias. In Morgan's case (54), an irreducible inguinal tubo-ovarian hernia with twisted pedicle, when child cried, hernial swelling remained unaltered in size. When a hernia becomes strangulated an impulse on coughing or with any other increase of the intra-abdominal pressure can no longer be felt; this is due to the fact that the hernial orifice is shut off entirely. Menstrual disturbances are recorded (68). Painful men-

struation was a source of complaint in cases 38, 46, 47, 50, 56, 58, 75, 102. Enlargement and increased tenderness of the hernial swelling during the menstrual period were noted in cases 14, 33, 56, 59, 77, 95, 108, 134. Absence of menstruation existed in the following adults: Cases 5, 6, 7, 13, 15, 16, 17, 18, 92. This absence of menses is explained as follows: In cases 5 and 15, the vagina was absent; in cases 7 and 17, it was imperforated; in cases 6 and 13, the uterus had no cavity; in case 92, there was no cervical external os; in case 18, there was no cervix uteri; in case 16, there was no uterus. The presence of the uterus in the hernial sac may be unaccompanied with menstrual disturbances (14, 93).

If an oblique inguinal hernia be incomplete, that is, if it does not extend beyond the inguinal canal, it may be mistakenly diagnosed tumor of the round ligament, bubo, epiplocele, or encysted hydrocele of the canal of Nuck. In cases 27, 99, and 131, the clinical diagnosis was inflamed encysted hydrocele of the canal of Nuck. In cases 99 (two cases) and 132, the clinical diagnosis was inguinal epiplocele. If a bubo be present, there will be some inflammatory lesion (or a history thereof) in the region drained by the afferent lymphatics. In the other conditions, tumor of the spermatic cord, epiploceles, encysted hydrocele of the canal of Nuck, the mistake in diagnosis is not very significant, as in all these conditions one must, to obtain cure, resort to operative treatment and to exposure of the inguinal canal.

TREATMENT.

Six of the reported cases were either autopsy-table (128) or dissecting-room discoveries (12, 20, 26, 59, 97). In cases 72, 87, 104, 110, 135, the nature of the operative intervention is not stated. In the other cases, the operators, after performing either a laparotomy or a herniotomy, disposed of the herniated organs either by reducing or removing them entirely or by removing a part and reducing the remainder. In some cases, the reduction of the hernial contents necessitated a preliminary division (73) or a dilatation (96) of the hernial rings (113), internal (99) or external (44).

The following table shows the operative steps employed by the various operators:

- A. Reduced herniated organs back into the abdominal cavity.
 - a. After a preliminary herniotomy:
 - 1. Tube returned to abdominal cavity (29, 37, 60, 67, 94, 107, 136 (two cases)).
 - 2. Ovary returned to abdominal cavity (25 (twenty-nine cases),

33, 80, 94 (eight cases), 132). In case 71, previous to reduction of the ovaries, a pear-shaped cystic parovarium was removed.

3. Tube and ovary returned to abdominal cavity (10, 11 (two cases), 15, 23, 24, 56, 59, 94 (eight cases), 95, 99, 105 (two cases), 129, 136 (three cases)).

4. Miscellaneous:

a. Reduced tube and intestine (69).

b. Reduced tube and omentum (66).

c. Reduced ovary and intestine (73).

d. Returned tube, ovary and intestine after dividing external ring (44).

e. Reduced entire tubo-ovarian apparatus (96).

f. Reduced cecum, appendix, uterus, tube, and ovary (88).

g. Reduced two tubes, one ovary, and uterus (17).

b. After a preliminary laparotomy:

1. Drew hernial contents, omentum and Fallopian tube, back into abdominal cavity (66).

B. Removed hernial contents:

a. After a preliminary herniotomy:

1. Removed tube.

a. Fimbriated end (29).

b. Diseased portion (3); adherent extremity of tube (137).

c. Entire tube (50, 63, 68, 70).

d. Entire tube and resected omentum (37).

2. Removed ovary (34, 47, 48, 51, 75, 76, 78, 79, 81 (nine cases), 82, 83, 85, 86).

3. Removed tube and ovary (8, 15, 18, 22, 24, 27 (two cases), 28, 30, 32, 36, 37, 38, 43, 49, 52, 54, 55, 56, 57, 84, 98, 99, 100, 101, 102, 106, 108, 109, 112, 113, 114, 118, 119, 120, 121, 122, 123, 124, 125, 127, 131, 138, 139), 30, was a tubal, 38, 84, and 108 were ovarian hernias, in which the operators removed the herniated organ and the corresponding adnexa.

4. Miscellaneous:

a. Removed ovary and abdominal end of tube (19, 45, 103, 133); ovary and part of tube (111, 115).

b. Removed ovary, tube and parovarium (117).

c. Removed ovary, tube and resected omentum (1, 31).

d. Removed tube, ovary and mass resembling uterine tissue (41).

e. Resection of tube, ovary and body to which they were attached (6).

f. Removed ovary, tube and rudimentary uterine horn (4); ovary tube and rudimentary uterus (34a).

g. Removed both tubes, right ovary and supra-vaginal portion of uterus (9).

h. Removed two tubes, one ovary and an infantile uterus (7).

i. Removed well-developed left and rudimentary right ovary, dilated tube, and bicornuate uterus (14).

b. After a preliminary laparotomy:

1. Removed tube and ovary (29 (two cases)), (33).

2. Removed tube, ovary and parovarian cyst (46).

3. Removed tube, ovary and solid rudimentary uterus (13).

4. Removed ovary and rudimentary uterus (5).

5. Removed tube, ovary and resected intestine (64).

6. Removed tube, ovary and appendix (62, 89).

7. Removed Meckel's diverticulum, appendix, tube, ovary, and resected gut (2).

C. Reduced some of the hernial contents and removed the remaining portion:

a. Reduced intestine and removed ovary (39).

b. Reduced intestine and removed tube and ovary (91).

c. Reduced uterus and removed both tubes (35, 95).

d. Reduced uterus and removed tube and ovary (93).

e. Reduced intestine and uterus, and removed tube and ovary (42, 53).

In Turgis' case (130), the hernial swelling was incised; pus escaped; there resulted a fistulous opening from which at each menstrual period there was a bloody discharge. In the intermenstrual intervals there was an absence of discharge. At the end of eighteen months, fistula closed.

Jordan (40), removed from the hernial sac a fetus, an ovary, a part of the tube and a fringe of omentum, and reduced the herniated gut. Hilgenreiner's patient (88) was a nullipara who eight years previously had been operated for a strangulated right inguinal hernia containing gut, uterus and right adnexa. These organs had been reduced and the hernial sac closed. At time of second operation, she presented symptoms of strangulated right inguinal hernia. The hernial sac was incised and found to contain the cecum, appendix vermiformis, the uterus and the right tube and ovary. All these organs were reduced into the abdominal cavity; patient recovered.

In two hundred and thirteen operated cases the results are stated: Eleven deaths; two hundred and two recoveries. The results of opera-

tion are not stated in cases 1, 39, 43, 87, 138, 139. Death occurred in cases 11, 21, 40, 45, 61, 64, 65, 77, 93, and 127. In cases 93 and 127, the cause of death remained undetermined. There were five hernias containing strangulated intestine, either gangrenous or on the verge of gangrene: Two femoral (64, 65), and three obturator (21, 45, 61). Case 77 died three weeks after operation from a broncho-pneumonia. In case 40, the following additional post-mortem findings were found: Multiple intestinal stenoses, chronic interstitial nephritis, and right hydronephrosis. In case 11, in the course of the operation, patient had a bowel movement; fecal matter got into the wound and infection resulted. As the autopsy advanced pleural and peritoneal tuberculosis were demonstrated.

We advise that all hernias of the uterine appendages, irrespective of anatomical site or of size, or of age of bearer, be subjected to an operation for radical cure:

- a. If the hernia be irreducible.
- b. If the hernia be strangulated.
- c. If the pedicle of the herniated organ or organs be the seat of torsion.

After the age of two years:

- a. If the hernia be bilateral.
- b. If other hernias be coexistent.
- c. When hernia cannot be painlessly, completely, and permanently kept reduced. Every time hernia was reduced, child cried (115).

d. If organs other than the uterine appendages be also present in the same hernial sac.

e. If the wearing of a hernial truss causes pain or aggravates the symptoms (13, 18, 27, 59, 77, 86, 110).

f. If the patient has to be subjected to ether or chloroform anesthesia for the performance of an operation of election, double advantage can be taken of this anesthesia, and an operation for the radical cure of the hernia performed.

g. If patient is exposed to pregnancy.

Operation in uncomplicated hernias of tube, ovary or of tube and ovary is no more dangerous than the operation for the radical cure of other hernias. It has practically no mortality. Infants bear hernia operations remarkably well. Broca performed four hundred and fifty operations in children under fifteen years of age with but one death.

The operation which has given the most universal satisfaction in the treatment of inguinal hernias is that devised by Bassini. It has

the advantages of safety, simplicity and efficacy. "Bassini's method is superior to earlier methods as well as to those since devised" (Coley). "In eleven hundred and eighty-five cases of inguinal hernias in which the typical Bassini operation was performed, there were nine relapses, seven-tenths of one per cent" (Coley). In all inguinal hernias in the female, in which Berger performed Bassini's operation, he never had a recurrence. We found four recurrences (3, 22, 24, 88). These last three recurrences were subjected to operation and recovery followed. The operative procedure employed is not definitely stated.

We advise operators to observe in their operations for inguinal hernia, the following suggestions:

1. Always wear and have the assistants wear rubber gloves. Since the introduction of rubber gloves at the Hospital for Ruptured and Crippled Children, primary union has been obtained in 98.5 per cent of the cases. In Chicago, we look with disfavor and with distrust upon surgeons who operate with ungloved hands.

2. All ligatures and irremovable buried sutures should be of absorbable material. The purpose of sutures is to keep divided tissues in apposition until organic union has been effected. After this has been accomplished, sutures if not absorbed or not removed may originate irritation, may act as predisposants to inflammation, to sinus formation. We strongly condemn the use of silk for vessel ligation or for buried sutures.

3. Always divide the aponeurosis of the external oblique muscle to an extent sufficient to give a good exposure of the inguinal canal, and of its contents. In the female, the inguinal canal in its normal state and after a hernia operation, in its restored state, should, outside of a few arterioles and nerve filaments, contain nothing but the round ligament, a structure much smaller than the spermatic cord. This round ligament comes from the muscular structure of the uterus; it finally becomes lost in the labium majus. In a hernia operation, if not the seat of disease, it should never be sacrificed.

4. Always make a high and careful dissection of the hernial sac from the surrounding tissues and especially from the round ligament to which it is often quite intimately adherent.

5. Always open the sac and determine by direct inspection and palpation the nature and state of the hernial contents.

6. After reduction or ablation of the hernial contents the sac is to be transfix and ligated as high as possible. Sac is then removed flush with the peritoneal cavity. This high and thorough removal of the sac is most important. So as to prevent the occurrence of peri-

toneal bulging at the internal ring, we are in the habit of anchoring or fixing the stump of the sac about two centimeters above this point. This is effected by needling each end of the ligature and carrying both ends separately and about one centimeter apart upwards in front of the properitoneal fatty cellular tissue, and behind the transversalis muscle for about two centimeters. The needles and ligature are then passed from behind forward through the transversalis, internal oblique and external oblique muscle, in front of which the ends of the ligature are tied.

7. Never sacrifice the round ligament; it is harmful to the statics of the uterus. Never transplant the round ligament; it is unnecessary. The round ligament is left undisturbed at the bottom of the wound, emerging at the lower angle of the latter; the internal oblique muscle is sutured to the shelving portion of Poupart's ligament; the divided margins of the external oblique aponeurosis are sutured and the skin incision closed. No drainage. After operation, no truss should be worn; a truss does not support the scar; it weakens it.

8. In the female, the internal and external abdominal rings can be closed without detriment to the patient. In direct inguinal hernias, ligation of the deep epigastric artery is at times unavoidable.

In hernias of the uterine appendages, the operator must decide as to whether the hernial contents are to be returned to the abdominal cavity, or whether they are to be removed.

As to the herniated tube, ovary, or tube and ovary, when normal, it goes without saying that they should be returned, irrespective of patient's age; if adherent to sac-wall or to some hernial content, the adhesions are to be loosened or divided, and if the organ or organs do not show marked structural impairment, they are to be reduced. These organs, when herniated, should be removed, if they be the seat of

- a. Unavoidable or actual gangrene.
- b. Benign neoplastic disease (mass showed the elements of a fibromyoma of ovary (86).
- c. Malignant neoplastic disease: Mass on microscopical examination proved to be a spindle-celled sarcoma of ovary (34).
- d. Voluminous cyst-formation (unilocular (38) or multilocular (85)). In Souligoux's case (43), ovary contained a multitude of cysts. "From ovarian cyst, six pounds of white liquid were removed" (27). Hydrosalpinx. "It was a cystic dilatation of the Fallopian tube forming a hernia in the crural canal" (58).
- e. Malformation or incomplete development (13).
- f. Suppurative inflammation (1). Ovary showed areas of sup-

puration (83); bilateral pyosalpinx (35); abscess in tube (49). Tube is sausage-shaped and contains three abscesses separated from each other (32).

g. Hematoma or interstitial ovarian hemorrhage (76). Repeated interstitial hemorrhages had transformed this organ into a single cavity (77b). In Lockwood's case (119), on microscopical examination, ovary was seen to be full of blood and to contain numerous ova.

h. Seat of tubal gestation previous or subsequent to rupture of fetal sac (40).

i. Tuberculosis limited to (104), or extending beyond the herniated organ. Ovary, tube, and sac were the seat of tuberculosis extending beyond the collar of sac (11).

j. Distortion beyond recognition. The mass removed, to the naked eye, resembled a kidney; microscopical examination showed that it was a tube and ovary (139).

k. Such pathological changes as prevent function. Tube was closed (91). Tube was as thick as little finger and four inches long (89). Often even after the opening of the hernial sac, it is difficult to recognize the contents. Lejars (3), in his case recognized the tube by its calibre, its tortuosity and its fimbriated extremity.

SUMMARY.

1. The Fallopian tube, the ovary, or the tube and ovary, in part or in their entirety, may be herniated.

2. The herniated tube, ovary, or tube and ovary may be the sole content of the hernial sac or there may be present as associated hernial contents, one or two or more of the following structures or organs: Meckel's diverticulum, appendix vermiformis, omentum, urinary bladder, intestine (small or large), uterus.

3. Tubal, ovarian, and tubo-ovarian hernias are congenital or acquired, unilateral or bilateral; exist alone or in association with one or more other hernias of the same or of dissimilar anatomical types, of the same or if dissimilar clinical characteristics.

4. These hernias, in a small proportion of cases, co-exist with malformations, under-development or absence of other internal genitalia or of some external genitalia: Imperforate vagina, absence of vagina, atresia of tube, unilateral absence of tube, of ovary, or of tube and ovary, absence of cervix uteri, rudimentary uterus, absence of uterus, etc.

5. In individuals having a hernia of a tube, an ovary, or of a tube and ovary, pathological states of other internal genitalia or of

some external genitalia may be present: Vaginitis, ovarian cystoma, uterine fibroid, uterine prolapse and other uterine displacements, etc.

6. These hernias may coexist with pathological states of organs other than the internal or external genitalia: Chronic hydrocephalus, multiple stenosis of intestines, hydronephrosis, etc.; these coexisting pathological states having no relation of cause or effect to the hernial infirmity.

7. Congenital or acquired hernias of the tube, ovary, or tube and ovary, may develop at any period of life. These hernias have been observed in nulliparae, in primiparae, and in multiparae. No age is exempt. No race is immune.

8. According to their anatomical site, hernias of the uterine appendages are designated as post-operative or ventral, gluteal, sciatic or ischiadic, obturator, femoral and inguinal.

9. The tube, the ovary, or the tube and ovary may be present alone or in association with other organs in the sac of any variety of gluteal, obturator, femoral or inguinal hernias.

10. Clinically, these hernias are reducible, irreducible, non-inflamed, inflamed, strangulated, or their pedicle may be the seat of torsion.

11. Torsion of the pedicle of a herniated ovary or of a tube and ovary, an accident peculiar to, and not infrequent in, hernias of the uterine appendages, gives the same clinical symptoms and determines the same anatomical changes in the herniated organs as are observed in the strangulation of hernial contents at one or another or more points.

12. We were able to collect eight times as many hernias of the inguinal type as of all the other hernial types put together.

13. Tubal, ovarian, and tubo-ovarian inguinal hernias are recent, old, or recurrent; are direct, interstitial or intra-parietal, indirect or oblique. If indirect or oblique, they are either complete or incomplete. A few sliding hernias are on record.

14. All the bilateral tubal, ovarian, or tubo-ovarian hernias recorded in the medical literature of the last twenty years were of the inguinal variety. In bilateral hernias, both hernias may or may not show the same degree of development; they may have appeared simultaneously or one may have appeared a shorter or longer time before the other. They may show similar or dissimilar clinical characteristics. When bilateral, one hernia may be irreducible and the other reducible.

15. All the hernias in which the complication "torsion of the pedicle" occurred were irreducible congenital inguinal hernias.

16. All the femoral tubal, ovarian or tubo-ovarian hernias recorded in the medical literature of the last twenty years were of the acquired type and appeared in advanced adult life. "Femoral hernia is essentially a hernia of adult life."

17. Hernias of the uterine appendages, in the absence of anomalies of the other internal genitalia or of the external genitalia do not prevent conception, do not interfere with gestation, nor unfavorably influence parturition. Pregnancy can occur previous to, during, and subsequent to, the existence of hernias of this nature.

18. The etiology of hernias of the uterine appendages is that of hernia in general. As main factors should be cited: All conditions that weaken the abdominal wall, all conditions that increase the intra-abdominal pressure, and all conditions that increase the mobility of the uterine adnexae. Heredity, pregnancy, and the partial or complete persistence of the canal of Nuck are the most important predisposing causes.

19. The herniated organ or organs may be free from all degenerative changes.

20. The herniated organ or organs may be bound to the sac-wall or to each other; may be the seat of congestion, gangrene, hemorrhage, inflammation, suppuration, tuberculosis (primary or secondary), cystic and neoplastic disease (benign or malignant).

21. The herniated organ may be the seat of gestation.

22. The hernial sac and the herniated adnexa or adnexae may be the seat of an inflammation, suppuration or other in character, which in progressing by continuity of surface has extended upward from the vagina giving us the following anatomical picture: Vaginitis, endocervicitis, endometritis, salpingitis or pyosalpinx, ovaritis and saccular peritonitis.

23. The hernial sac and the herniated contents may be the seat of an inflammation, suppurative or other in character, which has reached the tube and ovary by way of the parametrial and parasalpingeal connective tissue.

24. Pathological processes originating in the hernial contents may by extension by contiguity of tissue involve the sac and its overlying tissues.

25. The hernial sac and the herniated tube, ovary or tube and ovary can become the seat of pathological processes secondary to disease of the associated hernial contents. Epiploitis, appendicitis, gangrenous gut, etc. Infection spreading by contiguity of surfaces.

26. The herniated tube, ovary, or tube and ovary and the asso-

ciated hernial contents may be free of disease or the uterine adnexae may be normal and pathological changes be present in the associated hernial contents: Appendicitis, gangrenous gut, epiploitis, etc. The associated hernial contents may be normal and the herniated uterine adnexae be the seat of morbid changes.

27. It is at times difficult, at times impossible, to state with absolute precision whether the anatomical changes present in the herniated organ or organs developed previous to or subsequent to the displacement of the tube, ovary, or tube and ovary into the hernial sac.

28. Truss-treatment for hernias of the uterine appendages is curative, is often productive of discomfort and interferes with the nutrition and development of the herniated tube or ovary.

29. Women who suffer from any form of hernia should be carefully watched before, during and after their confinement so as to prevent or rather minimize any undue strain upon weak regions of the abdominal walls. These women, at the close of lactation or towards the end of the first year following their confinement, should in the absence of contra-indications be subjected to an operation for radical cure of the hernia.

30. In the female, all hernias irrespective of anatomical site, of clinical condition, or of nature of contents should, in the absence of a constitutional state contraindicating operations of election, be subjected to an operation for radical cure.

31. Clinical conditions so closely simulating hernias of the uterine appendages that a positive diagnosis without operation appears impossible, should be subjected to operative treatment. Only benefit can be derived from adherence to this rule. A diagnosis is established, and a cure is effected.

32. In these hernias as in all other hernias, the ideal time for operation is previous to the development of degenerative or other pathological conditions in the herniated organ or organs and previous to the occurrence of any of the various complications incident to hernias.

33. The mortality of operations for the radical cure of hernias, if performed at an opportune time and by a rapid operator competently assisted, is nil.

34. To be effective, operations for radical cure of hernias must well fulfill two essentials: The suppression of the sac and the strengthening of the area through which the hernia has escaped.

35. In all herniotomies, the sac should be incised and the hernial contents examined.

36. In the female, the inguinal rings are comparatively small. They can, without inconvenience to the patient, be closed.

37. The herniated normal tube or ovary should never be sacrificed. These organs have an important rôle and in the absence of marked structural impairment, should be returned to the abdominal cavity.

38. The herniated abnormal tube, abnormal ovary or abnormal tube and ovary should be removed if their return to the abdominal cavity is associated with peril, immediate or remote, to the patient or if these organs are so altered anatomically as to be functionally worthless. In sacrificing tissues or organs, the surgeon must be economical.

39. Until we are better informed as to the frequency and nature of true and false hermaphroditism, removed herniated uterine adnexae not having a distinctive structure should be subjected to a microscopical examination. This will avoid mistaking testicular for ovarian tissue and vice versa.

40. In the treatment of strangulated sciatic or gluteal, obturator and femoral hernias of the uterine appendages in which the hernial sac also contains gangrenous gut, a double operation is almost always indicated: a laparotomy for the repair of the intestinal lesions, and a herniotomy for the radical cure of the hernia.

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MOUNTAINS AND MOLE HILLS.

By B. G. R. WILLIAMS, M. D., PARIS, ILLINOIS.

Author of "Laboratory Methods, With Special Reference to the Needs of the General Practitioner," etc., etc.

Many men wish to eat their cake and have it too. Now and then, even in medicine, we run across a man who is willing enough to spend his leisure moments in taking life easy, but complains if his reward is not equal to that of the man who puts his supreme effort into his work. In diagnostics, such a man is termed a guesser, or a sloppy worker; and just now he finds himself in a very embarrassing position. Here it is:

The old idea that bedside versus laboratory methods of diagnosis should be debated, has given place to the opinion that both should be employed, especially in certain cases. There are several reasons for this which I shall not detail, but shall attempt to pick out one of them and present it to the practitioner. This is it: Our medical schools are fitting their graduates for the more important departments of analytical work, and the older man who has not had this advantage is forced to compete with methods in a contest where he will eventually finish loser.

What I shall say comes from the heart of a practitioner of medicine and not from an ultra scientific crank, and I trust that it will be accepted by my readers in the spirit in which it is offered. In order to point out the chief possibilities and probabilities of the near future, it will be necessary to talk plainly.

In the first place, it is just as well to acknowledge that most of those analytical procedures which have been recommended to the physician are of no value whatever. But certain others are of value to the diagnostician and are often absolutely necessary, if he desires to apply the very best treatment to the case:

There is a notion among many of the older practitioners that the field of laboratory aids, is for them an impossible field. But as a matter of fact, we have found that the really valuable diagnostic analysis may be very easily carried out by the general practitioner with but little study which he will find absorbing, with but little expense, which will prove a good investment for the future, and with very little trouble or loss of time, which will more than repay for the slight effort he will put forth. The laboratory idea looms up larger day by day and threatens the very future of the man who will not heed the warning.

Perhaps until now the guesser has not been cornered. The march of the laboratory idea, though certain, has been slow. Never destined to usurp the high post held by the bedside methods, it has nevertheless been forced to bear this stigma (from the guesser). But now we all know that the very best diagnosis demands both bedside and analytical aids; and in the face of this light, the guesser does not shine.

Like a cat he has leaped here and there, falling always upon his feet; but he has noted that during the past few years, these falls have been harder and at times accompanied by serious injuries. As a result, he has grown somewhat wobbly, and is usually willing to come into the crowd if he has but the chance.

Like a cat he has been a very versatile creature. Kill him and he always comes back (which does not mean, however, that he enjoys the killing process). Now the cat would fain eat fish, but will not wet his feet to catch them. Does he reason that it is easier to get away from the bank than the bottom of the stream? Put the fish in a bucket of water and he still will hesitate. Recall also that the cat can swim. So here, it seems to me, the comparison should end.

The guesser has not been given a chance. Show him the way, and he, like every other true physician, will inform himself upon the vital points of laboratory aids. It must be realized that the analytical world is difficult of exploration by those men whose diplomas were issued a score of years ago. It is just as well to be fair and broad in these things.

Such a man takes down his book on diagnosis desiring for example to test for diacetic acid in the urine. Under this head, he finds several methods described in a manner best suited to college students or research laboratories. The technic is impossible of application in his office. Besides he knows that some of these tests are of no value whatever. If he meets difficulty, the book shows him no way out of it. A hundred other possibilities and impossibilities appear. Disgusted he gives it up before he has begun. After a few similar experiences, he is satisfied to guess a bit longer.

Now, if he knew that the only necessary operation was to pour into a glass tumbler or a test tube, about four drams of a clear strong solution of iron chlorid and add to this three or four drops of the fresh urine sample, in which case if diacetic acid were present, a beautiful wine red color would appear, he would never omit this valuable little test, nor indeed many others.

So that my plea is for the guesser and to the guesser. I have

studied this subject from his position for several years, and am assured that he is not to blame for the uncomfortable position in which he finds himself. He is still falling upon his feet and trying his best to think it out. Why not give him a chance?

Perhaps some of my readers fall into this class. As I have stated above, the physician may easily learn and apply most of the simply and valuable tests in his office without extensive equipment, study and cost; will become enthusiastic in their completion and wonder how he ever got along without them. I have carried on a large correspondence with such men during the past few years and am always willing to answer such questions as I may be able providing the writer enclose his return postage. Many men buy impossible apparatus and expensive equipment or guides intended for the research worker.

As the laboratory idea has loomed up large, some men have attempted to play safe by making the indefinite diagnosis. But the advances of rational treatment and especially of surgery, have rendered this an extremely dangerous practice. The autointoxication only too often means chronic tertiary syphilis and the only valuable drugs are withheld because the laboratory examinations were omitted. In the same way, the case of dyspepsia will continue to die of consumption, abscess of the gall bladder, cancer of the stomach or appendicitis unless an up-to-date practitioner is called and shows the true state of affairs. I could give many other examples. Even the layman is awaking to the value of these examinations; and this is proceeding uncomfortably fast (for the guesser) in some portions of the country.

Doctor, tomorrow the whole world will be awake to this great wealth of information. Tomorrow, just as you are in the prime of your practice, do you wish to be shelved as a backnumber and incapable? Even within the past year there have been many changes. Think it out for yourself. It is in your books and medical journals. It is discussed in your medical societies. Short talks with your colleagues will drive home the truth. Diagnostics in its progress will not tarry for the man who demands to be shown.

The words of the great Austin Flint apply more rigidly today than yesterday and give promise of greater strength tomorrow: "How is it possible to bring to bear upon a case of disease, established principles of treatment until the character and seat of the disease are ascertained?"

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Editorial.

THE ELECTION.

At the time of writing, two days after the election, Governor Wilson of New Jersey, the Democratic candidate, has been elected President of the United States with the electoral votes of forty states to his credit—an unprecedented majority of the electoral college. This great Democratic victory is, as a matter of cold fact, as the figures stand today a rather severe Democratic defeat, for notwithstanding the growth of population and the doubling of the vote of California, Mr. Wilson's total vote seems to be less than the vote cast for Mr. Bryan four years ago.

The combined total vote cast for Mr. Taft and Col. Roosevelt is about what the Republican vote should be. The Prohibition candidate gained 30,000, and the Socialist candidate gained about 330,000 votes over four years ago. After making due allowance for all factors in

the vote, it seems clear that the foreign Democratic vote rejected Mr. Wilson. In California, where the foreign vote is comparatively small and where there were no Taft electors and the struggle was between Mr. Wilson and Mr. Roosevelt, the Democratic vote shows a gain over four years ago.

The voters in this election disregarded the party label more than in any election in a generation. One thing the voters seem to have had in mind was to throw the political boss into the discard. A new boss, however, has come into the field, and that is the newspaper boss. It also must go, for the people are woefully tired of having some self-constituted authority telling what is good for them.

The human side of things has received great emphasis in this election. The conservation of human beings and human welfare has been prominent in the campaign, and Mr. Wilson has said enough along this line to show he has grasped the salient features of the question.

Government in all ages has been attentive to the interests of property, of business, of religion, etc., and in recent years great attention has been given to the care and improvement of domestic animals, to the conservation of forest and stream, and even the prevention of floods is a live question now. Let us hope that man himself will from now on be first in the government eye, that he will be watched over at his birth and before, that he will be taught how bad habits of life lead to degeneracy and how right living of parents makes for better vigor in children. The country's greatest asset is in the vigor of the race.

PURE LAKE WATER.

An international joint commission on waterways met in Ottawa, Canada, on October 1st. The announced purpose of the meeting was to formulate a program for the investigation of the pollution of the great lakes and other boundary waters. The Great Lakes International Pure Water Association and the National Association for the Prevention of Pollution of Rivers and Harbors met in Cleveland, Ohio, October 23rd. At this meeting Dr. Allen J. McLaughlin, of the government health service, favored a guarded and regulated discharge of sewage into the lakes. This stand was opposed by Dr. Charles J. Hastings, health officer of Toronto, and other Canadians who favor a general law of both countries forbidding the discharge of sewage into the lakes.

These two meetings indicate the growth of sentiment in favor

of retaining the lakes as great reservoirs of pure drinking water and for all domestic purposes.

The city of Milwaukee has recently employed a commission of engineers to study her sewage problem, and they have recommended that it be treated by mechanical means, the effluent to discharge into the lake and the sludge that is abstracted to be dumped far out in the lake. This may be the best that can be done at present, but why the sludge cannot be disposed of on land does not seem apparent. Ultimately all cities bordering upon fresh water lakes will be compelled by the necessity for pure water to dispose of their sewage upon land. The most that finally will be permitted to flow into lakes will be the storm water. It would be well for all lake cities to so arrange their sewage system that the house drainage will be in as small bulk as possible and thus minimize the cost of handling.

It is not probable that any mechanical means of treating sewage will leave a safe effluent that may be turned into any lake. Sewage disposal in broad irrigation will doubtless be found the safest and cheapest method when all things are considered.

Sewage disposal by dilution must continue to be the safest and best method in all cities upon stream of sufficient size and sufficient length to furnish purification as they flow.

The use of the waters of the great lakes for domestic purposes is the best use it can be put to. It outranks all other uses. The utility of the lakes for navigation is small when compared with the need for pure water to drink.

Book Reviews

SURGERY OF THE BRAIN AND SPINAL CORD. By Prof. Fedor Krause, M. D., of Berlin. English Adaptation by Dr. Max Thorek (Rush Medical College, University of Chicago). Volume III. With 42 Figures (3 of Which are Colored) in the Text, and 47 Colored Figures on 22 Plates. New York: Rebman Company, 1123 Broadway. Price, \$7.00 net.

This third volume of Krause's magnificent work completes the subject of brain surgery. Like its predecessors the book is illustrated by magnificent colored plates and photographs, most of which were made at the operation table, and though highly colored are full of information and interest. The larger part of the volume deals with the subject of surgery of the spinal cord, one of the most interesting,

important and advanced of all surgical subjects. It was only in 1887 that Victor Horsley made the first operation upon the spine for the removal of a tumor of the cord. Since that time operations of a similar sort are being done all over the world, and in this country particularly, some of the best accomplishments have been attained.

The first chapter under this heading pertains to the technic of the operation. The author calls especial attention to the necessity of securing for the patient an easy position in order to avoid disturbance of the respiratory excursions of the chest which are seriously hampered if the patient be placed prone. He favors the right lateral and half-abdominal position, to be changed from time to time during the operation. A number of American operators have devised special tables which support the head and shoulders beyond the end of the ordinary operating table, giving the chest free opportunities. Krause believes that attention to this detail may make all the difference between a fatal and a favorable outcome, and thinks he has seen a patient who perished because the respiratory function was not sufficiently supervised during the operation. He also calls attention to the necessity of using warm blankets and other operating room equipment to prevent collapse, etc. Some of these operations, extensive and prolonged as they are, he has done, and seems to favor doing them, under local anesthesia. He finds, however, that after the dura is reached it is sensitive and also that manipulation of the posterior portion of the cord causes pain to the patient.

He reinforces the self evident proposition that the cord should be handled as little as possible, and yet this is a rule which seems to be seriously overlooked by many operators. He favors a wide opening of the spinal canal and the removal of several vertebral arches, for which purpose he employs a laminectome of his own devising which appears to be a very efficient and useful instrument for the purpose of dividing the laminae. It is with pleasure we note that he has given up the use of the chisel, both in spinal and cranial surgery. It would be a gratification to the writer if the mallet and chisel, at least as far as these operations are concerned, could be relegated to the past. He does, however, approve of the use of a blunt chisel, at times driven sharply against the diploe of the severed vertebral processes to control bleeding if necessary.

He makes no mention of the unilateral opening of the spinal canal which is favored by one or two American surgeons, and indeed it is difficult to see how any advantage can pertain to such an operation, while many disadvantages are undoubtedly present. He says

the vertebral canal should be widely exposed in every instance. After the removal of the bones, if the condition for which operation is done is not at once evident, he suggests extensive extradural probing, but negative results thus obtained do not necessarily exclude intradural tumors which may yield to the passage of the probe. It is therefore a general rule that the dura should be opened in all cases, and here the use of the intradural probe will frequently discover a tumor at some distance from the opening, due regard being had to the anatomical condition of the parts, the obstructions furnished by the denticulate membrane and the nerve roots.

As far as possible he attempts to close the wound without drainage. The dura is carefully sutured, and then deep sutures are used to approximate the muscular layers. He sacrifices the bone fragments in all instances, as they are not essential to the strength of the spine and may lead to subsequent disturbance if retained. In rare instances continuous oozing requires the use of drainage, which he takes precautions not to carry down to the depth of the dura in order to avoid a constant seepage or actual drainage of spinal fluid. In some cases this occurs in spite of the best precautions but he does not advise an attempt to stop it entirely, believing that in the course of time it takes care of itself. Incidentally, he finds no untoward symptoms developing upon the opening of the dura even when the immediate escape of fluid is considerable.

Chapters on diagnosis of the tumor, of its level, of its character, follow the ordinary lines of other text books. He uses the diagrams of Bing and the tables of Villegier, to which nothing material is added. Then follow the detailed histories, illustrations, and explanations of numerous cases of tumors, diseases, and accidents of the cord and of the cauda. A very interesting chapter on serous circumscribed meningitis would indicate that this condition is very much more frequent than is supposed. It gives rise to symptoms identical with those of cord tumor and is even more amenable to operation. Circumscribed meningitis and fibroid thickening, pachymeningitis, and other local conditions are illustrated by beautifully detailed cases.

Krause devotes quite a little space to the course followed in these surgical cases after laminectomy. He speaks particularly of continuous discharge of the cerebrospinal fluid and the symptoms which sometimes seem to develop through the intracranial and intraspinal tension due to an excessive amount of spinal fluid. In both events his practice seems to be expectant, with scrupulous antisepsis for the discharging fluid which sometimes follows the track of the stitch or an

unhealed portion of the incision. He is careful to point out the difficulties that are likely to arise in the control of the bladder and bowels, if not already seriously affected before the operation, and to the increased paralysis which usually follows the surgical manipulations of the cord. He does not seem to have encountered the sudden distention of the bowels which in some instances has given rise to the idea of obstruction of the intestine, but which ordinarily will recede if left alone or treated with cathartics and rectal injections. Strangely too, in his unusually large experience he has very rarely encountered extensive endotheliomata in the lower portion of the cord membranes and cauda, which have furnished quite a proportion of cases reported by American observers.

The book closes with an index which covers the entire three volumes and brings to completion a monumental contribution to this advanced surgical field. Nobody who contemplates or is interested in surgery of the brain or spinal cord can afford to be without the entire work.

ARCHIBALD CHURCH.

A TREATISE ON FRACTURES AND DISLOCATIONS. By Lewis A. Stimson, B. A., M. D., LL. D., Professor of Surgery in Cornell University Medical College, New York. New (7th) edition, thoroughly revised. Octavo, 930 pages, with 459 engravings and 39 plates. Cloth, \$5.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1912.

This splendid book is so well known, as a standard work on fractures and dislocations, that it is only necessary to announce the successive issues of new editions. This, the seventh, contains over one hundred new illustrations, from photographs and skiagrams, adding greatly to the student's understanding of the text. Other changes of note are found under the heading of treatment in old dislocations, and also in regard to the operative treatment of recent fractures. Some new sections on fractures of the small bones, both hand and foot, have been added. In short, this book is a masterwork beyond criticism, a safe guide for the surgeon and an invaluable teacher for the student and general practitioner.

DISEASES OF THE STOMACH, INTESTINES AND PANCREAS. By Robert Coleman Kemp, M. D., Professor of Gastro-intestinal Diseases, New York School of Clinical Medicine. Second edition, revised and enlarged. Octavo of 1021 pages, with 388 illustrations.

Philadelphia and London: W. B. Saunders Company, 1912.
Cloth, \$6.50 net; Half Morocco, \$8.00 net.

It is a genuine pleasure to read Kemp's work. Every subject is discussed in the most careful, painstaking manner, which leaves no doubts in the mind of the reader that he is reaping the benefit of the experience of an expert and great clinician. We are gratified to find that the author still upholds Chittenden's views as to the dangers of excessive protein diet, of which we are convinced after many years of practical observation. Several new subjects are treated in this edition, as for instance colon bacillus infections and diseases of the pancreas. Many new illustrations have been added. Mechanical methods in visceral displacements are minutely described. Special attention is called to the need for surgical procedures when indicated. Due consideration is also given to the reflex gastro-intestinal disturbances in diseases of the gall bladder and appendix, formerly attributed to gastric neuroses. Kemp's work must be classed among the standard books without which no physician's library is complete.

SURGERY AND DISEASES OF THE MOUTH AND JAWS. A Practical Treatise on the Surgery and Diseases of the Mouth and Allied Structures. By Vilray Papin Blair, A. M., M. D., Professor of Oral Surgery in the Washington University Dental School, and Associate in Surgery in the Washington University Medical School. With 384 illustrations. St. Louis: C. V. Mosby Company. 1912. Price, \$5.

This is an admirable book, written by a competent man with great experience, thoroughly up to date, practical and instructive throughout. It indeed meets a long felt want and will be welcomed by both the medical and dental professions. The illustrations are excellent and mostly original. To give an idea of the scope of this book, we wish to mention the chapters on injuries of the teeth, fractures and dislocation of the jaw, congenital, facial, palate and lip clefts. The author favors the advisability of very early operation in congenital clefts, so long advocated by Brophy, and gives his reasons why the advantages are less the longer the operation is deferred. Excellent chapters follow on deformities and malrelations of the jaws; infections of the mouth, teeth, peridental tissues and jaw-bones; tumors of the mouth, lip, jaw-bones; affection of the salivary glands, tongue and pharynx.

Special mention should also be made of the excellent description and treatment of cancer of the lip and tongue. The author well

emphasizes this point: That the man who undertakes a primary operation on a case of cancer fitted for radical treatment assumes a great responsibility; and unless he does his work correctly and thoroughly, he does his patient harm. In carcinoma of the lip the author claims that cures should be above 75 per cent, 31 per cent according to Warren when the tongue and floor of the mouth are involved, but only 3 per cent when it has spread to other structures, showing the need of early diagnosis and operation. Other chapters on diseases of the cervical lymphatics, tumors of the velum, tonsils and pharynx, ligation of arteries, tic douloureux, local and general anesthesia conclude the book. We commend it most highly to both our surgical and dental friends.

PRINCIPLES OF HYGIENE For Students, Physicians, and Health Officers. By D. H. Bergey, M. D., First Assistant, Laboratory of Hygiene and Assistant Professor of Bacteriology, University of Pennsylvania. Fourth edition thoroughly revised. Octavo of 529 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$3.00 net.

Most books on Hygiene are so lengthy and so technical that they do not interest the practising physician. At the same time it has to be admitted that hygiene is one of the topics which a physician should be well posted on, whereas as a rule it is the one he knows least about, for the reason given above. The book before us solves the problem. It treats on the subject in a most interesting, practical manner. It is not bulky. It is well illustrated, with a clear, readable text, contains only few tables of statistics—in short, makes the subject of hygiene both entertaining and instructive. This explains why four editions have been called for. This last one has been thoroughly revised, contains the advances made in water and sewage purification, also in the preventive methods of typhoid fever and dysentery. We call again special attention to the chapters on food and dieting, water and water supply, and vital causes of disease. No physician should be without a copy of this valuable book.

THE PRACTITIONER'S VISITING LIST for 1913. An invaluable pocket-sized book containing memoranda and data important for every physician, and ruled blanks for recording every detail of practice. The Weekly, Monthly and 30-Patient Perpetual contain 32 pages of data and 160 pages of classified blanks. The 60-Patient Perpetual consists of 256 pages of blanks alone. Each in one wallet-shaped book, bound in flexible leather, with flap and pocket, pencil

with rubber, and calendar for two years. Price by mail, postpaid, to any address, \$1.25. Thumb-letter index, 25 cents extra. Descriptive circular showing the several styles sent on request. Lea & Febiger, Publishers, Philadelphia and New York.

This is one of the popular visiting lists for physicians, well arranged, compact and convenient. It is intended for thirty patients per week and contains besides the usual table of doses, a valuable section on "Therapeutic Reminders," one on "Location of Arteries," "Examination of Urine," "Important Incompatibles," etc.

NEURASTHENIA SEXUALIS. A Treatise on Sexual Impotence in Men and Women. By Bernard S. Talmey, M. D. Former Pathologist to the Mothers' and Babies' Hospital, and Gynecologist to the Yorkville Hospital. With nineteen drawings in the text. The Practitioners' Publishing Company, 12 W. 123d St., New York City. Price, \$2.00.

As cases of neurasthenia sexualis only come under the care of the practicing physician or specialist, we would suggest omission hereafter of the chapters on anatomy and physiology as these are sufficiently familiar to every medical man. This book contains many good points on the subject with which it deals, especially in the chapters on etiology and the hygiene of impotence. We commend the book to those who are interested in this subject and who are in a position to advise others.

A TEXT-BOOK ON THE PRACTICE OF GYNECOLOGY. For Practitioners and Students. By W. Easterly Ashton, M. D., LL. D., Professor of Gynecology in the Medico-Chirurgical College of Philadelphia. Fifth edition, thoroughly revised. Octavo of 1,100 pages, with 1,050 original line drawings. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$6.50 net; Half Morocco, \$8.00 net.

We feel gratified in announcing another edition of Ashton's Gynecology, that our predictions came true in reviewing the first edition, when we stated that this book would take rank at once as a standard work and that many editions would be called for. In seven years five large editions and four reprints have been issued. The reason is simple. The book is eminently practical, sound in its teachings, sane and safe in the treatment recommended, and in the language of the author, takes nothing for granted in describing the diseases and their treatment. Each revision again has been most carefully done, keeping the book always fully abreast of the times.

So in this edition we find many changes in the text, new operations recommended in place of former ones, new illustrations added, others omitted. Notable changes are found in the chapter on X-rays. Other changes or additions are found in the sections on cancer, sarcoma, syphilis, gonorrheal and septic infections of the uterine cavity and Fallopian tubes. The recent uses of tincture of iodine are discussed from personal experience. Among other changes we note that the section on operation of appendectomy has been entirely rewritten. Briefly, the book has been thoroughly revised, and will be most gladly welcomed by all interested in gynecology and gynecological surgery.

A TEXT-BOOK OF OBSTETRICS: Including Related Gynecologic Operations. By Barton Cooke Hirst, M. D., Professor of Obstetrics in the University of Pennsylvania. Seventh revised edition. Octavo of 1,013 pages, with 895 illustrations, 53 of them in color. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$5.00 net; Half Morocco, \$6.50 net.

Wherever obstetrics is practised, Hirst's book is favorably known. Hence there is nothing for the reviewer to do in announcing new editions but to enumerate the changes made. This is apparent in the article on diseases of the breast. Other advances of merit have been incorporated in the text. The policy of including the diseases of women and their treatment has been continued. In fact, the book has been carefully revised, fully brought up to date, and remains as before a model standard text-book on obstetrics, a necessary and welcome volume in every progressive physician's library.

A TEXT-BOOK UPON THE PATHOGENIC BACTERIA AND PROTOZOA. For Students of Medicine and Physicians. By Joseph McFarland, M. D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia. Seventh edition, thoroughly revised. Octavo of 878 pages, 293 illustrations, a number of them in colors. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$3.50 net.

When seven editions of a book have been called for, it stands to reason that it is sufficiently well known to require no further endorsement. In short, this book is a standard work and deservedly popular. This edition has been considerably enlarged by the consideration of pathogenic protozoa and in the words of the author now meets all modern requirements: By describing all the pathogenic micro-organ-

isms of importance in human medicine, whether they be bacteria or protozoa. By bringing each micro-organism under consideration into a historic, geographic, biologic and pathologic setting; and by explaining such methods of diagnosis and treatment as grow out of the knowledge of microbiology in general and of the micro-organisms in particular. We know of no better work for the student or practitioner that meets all these requirements than the work before us.

STATE BOARD EXAMINATION QUESTIONS AND ANSWERS. A Practical Work Giving Authentic Questions and Authoritative Answers in Full That Will Prove Helpful in Passing State Board Examinations. Reprinted from the Medical Record. Fourth edition. Thoroughly revised. Every Question Answered in Full. New York: William Wood & Co., 1912. Price, \$3.00 net.

This book is simply indispensable to all candidates for State Board, Army, Navy, and Public Health examinations. It is equally valuable as a Quiz Compend for medical students. It covers the whole range of medical sciences and quickly convinces the reader of the points in which he is deficient, and at the same time gives him the necessary coaching and information. The present edition has been thoroughly revised and covers all questions and answers of thirty State Medical Licensing Boards. It is a most valuable book, and can be read with profit by everyone.

THE SOUL AND SEX IN EDUCATION. By Jirah D. Buck, M. D. Author of "A Study of Man," "Constructive Psychology," etc. Cincinnati: Stewart & Kidd Company. 1912.

This book is a dissertation on scientific psychology for parents and teachers. It is full of thought, good teaching, sound philosophy, and certainly proves that "the early education of the child, the influx of creative life at adolescence, and the building of character throughout our career on earth, are all woven on the golden thread of Being; with Pure and Undeified Religion as the crowning glory of it all." We regret, however, that the author should in the last chapter on the Problem of Sex make a wholly uncalled for and equally unjust attack on the Catholic Church. This church most emphatically stands for the uplifting of both man and womankind, and would not be the strongest church in existence today were it not supported by Divine influence, and having a great mission to fulfill. The reviewer is not a Catholic, but is utterly unable to comprehend how any fair-minded man can do other than pay homage to this magnificent institution,

this pioneer of religious work in all lands, the comforter and solace of countless millions, unrivalled in charity and educational work, the protector of the weak, the refuge of the sick and afflicted and all suffering humanity.

NEW ASPECTS OF DIABETES. Pathology and Treatment. By Prof. Dr. Carl von Noorden, Professor of the First Medical Clinic, Vienna. Lectures Delivered at the New York Post-Graduate Medical School, New York. E. B. Treat & Company. 1912. Price, \$1.50.

The distinguished author condenses in this recent course of lectures his knowledge of diabetes gained by personal experience during the last seven years in treating more than 2,000 cases of diabetes mellitus in his clinic and sanatorium. After tracing the sources of sugar in the system, the rise of caloric production and its causes, and the control of sugar formation and its disturbances, he then gives his invaluable therapy of diabetes, covering all classes of cases. A chapter on acetonuria concludes these valuable lectures. Every practical man should give this book a careful perusal, so as to treat his cases scientifically and not in the haphazard way in which it is usually done.

THE PHYSICIAN'S VISITING LIST (Lindsay & Blakiston's) for 1913. Sixty-second Year of its Publication. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. Sold by All Booksellers and Druggists.

This Visiting List will always maintain its deserved popularity. It is well arranged, and besides the regular memoranda pages for every day of the year contains pages for obstetric engagements, records of births and deaths, addresses, cash account, etc. There are also the usual tables of dosage and incompatibilities, emergency treatments, and other valuable suggestions.

DISEASES OF THE MOUTH. For Physicians, Dentists, Medical and Dental Students. By Prof. Dr. F. Zinsser, Director of the Department of Dermatology at the City Hospital, Lindenburg; Dozent at the Academy for Practical Medicine, Cologne. Translated and Edited by John Bethune Stein, M. D. With 52 Colored and 21 Black and White Illustrations. New York: Rebman Company, 1123 Broadway. Price, \$7.00 net.

This book must be seen to be properly appreciated. It contains splendid colored plates giving a true picture of the various syphilitic and other lesions of the mouth, tongue and oral cavity. Wish it were

possible that every dentist as well as doctor could carefully study these plates and attain thereby the necessary caution and also the ability to look for and diagnose these oftentimes deceptive and dangerous infections. It is one of the best pictorial atlases on this subject in existence. The author's main intent is to teach differential diagnosis and treatment is barely touched upon. But for purpose of diagnosis, this book is not excelled. We most cordially commend it to our readers.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M. D., at Mercy Hospital, Chicago. Volume I, Number 5. October, 1912. Published Bi-monthly by W. B. Saunders Company, Philadelphia.

Number 5 of the first volume of the Murphy Clinics continues the work with all its valuable practical features as much in evidence as ever. An idea of the wide scope of the work may be gained from the following list of subjects contained in this number: Remarks on anesthesia, nephrolithiasis, cholecystitis, gastroduodenal ulcer, appendiceal abscess, chronic adhesions simulating recurrent appendicitis, exophthalmic goitre, traumatic lesion of the brain, trifacial neuralgia, tumor of spinal cord, chronic mastitis, recurrent mastitis, recurrent ovarian cysts, sarcoma, retroversion of the uterus, rectocele and perineal laceration, un-united fracture, and ankylosis of elbow and hip joint.

HIMSELF. Talks with Men Concerning Themselves. By E. B. Lowry, M. D., Author of "Herself," "Truths," etc., and Richard J. Lambert, M. D. Chicago: Forbes & Company. 1912. Price, \$1.00 net.

This is a good sensible book for the laity, which treats on such subjects as venereal diseases, impotence, self abuse and allied topics in a clean, sensible and instructive manner. A valued addition is a chapter on sterilization of the unfit. We also commend the author's far-sightedness as shown in the following quotation: "A trained nurse might be allowed to teach these poverty-stricken people how to prevent the birth of more burdens for the State. If such instruction were allowed the slums would be metamorphosed in ten years." This book can be safely recommended to young and older men.

THE MEDICAL RECORD VISITING LIST OR PHYSICIANS' DIARY for 1913. New Revised Edition. New York: William Wood & Company.

To physicians familiar with the Medical Record Visiting List we need only state that the new 1913 edition is now ready. To those who

have never used this book we call attention to some of its contents: Estimation of the Probable Duration of Pregnancy; Approximate Equivalents of Temperature, Weight, Capacity, Measure, etc.; Maximum Adult Doses by the Mouth; Solutions for Subcutaneous Injection; Solutions in Water for Atomization and Inhalation; Treatment of Poisoning and Other Emergencies; Blank Pages for the regular Visiting List, Consultation Practice, Obstetric Engagements, Record of Vaccinations, Register of Deaths, Addresses and Cash Account. This edition has been revised to increase the amount of matter calculated to be useful in emergencies, and eliminate such as might better be referred to in the physician's library. The most important change is in the list of remedies and their maximum doses, and the indication of such as are official in the United States.

News Items

For Rent.—Office hours in very desirable rooms in physician's suite. Room 705, 15 East Washington street, Venetian building, Chicago.

Personal.—Dr. Frank W. Lynch announces the removal of his office to the Monroe building, 104 South Michigan avenue, suite 920. Telephone, Randolph 5565.

Dr. and Mrs. Rudolph Holmes have returned from Europe.

Dr. Fenton B. Turck has removed to New York City, where he has purchased a home at 14 East Fifty-third street.

Dr. Clarence L. Wheaton has been appointed physician in charge of the male service at the Chicago Winfield Tuberculosis Sanitarium.

Dr. Clarence Webster has moved his office to the Monroe building, 104 South Michigan avenue, suite 920. Telephone, Randolph 5565.

Dr. Josephine Young has been appointed medical adviser for women for the junior and senior years in the University of Chicago, and for the School of Education.

Dr. Charles P. Small has resigned as university physician to the University of Chicago, and will hereafter devote his entire time to his special line of work.

The Italian Colony of Chicago gave a banquet, October 27, in honor of the fiftieth birthday anniversary of Dr. Camillo Volini, chief of the medical staff of the Columbus Extension Hospital.

Mr. William Whitford, medical stenographer, has removed his office from the Columbus Memorial building to the North American building, 36 South State street. The telephone number remains as before, Central 2523.

Dr. R. S. Klein, formerly professor of histology and embryology at the Fordham University School of Medicine, New York, has been appointed director of the new research laboratories of the Hahnemann Medical College, Chicago.

For Rent.—Office hours in a newly finished and newly furnished suite. Attendant furnished. Dr. John L. Porter, 907 Chicago Savings Bank building, 7 West Madison street.

Dr. Joseph C. Pickard, for twenty-five years a practicing physician on the north side, died of pneumonia on October 30th at his residence, 55 West Chestnut street. He was 71 years old.

Wanted.—Young medical student or doctor to correspond with us about a new way of money and friends making in the health and efficiency promoting line. Address Geo. A. Schmidt (IT) Co., 236-238 North avenue, Chicago. Established 1875.

For Rent.—A fully equipped, light, large office in a very desirable suite, including attendant, phone, etc. Can rent for the entire day or for any hour. Very reasonable. Apply to Dr. M. L. Sterne, suite 1124 Republic building, State and Adams streets.

A Clinic in Defects of Speech and Voice is now in operation in connection with the Nose, Throat and Ear Department, at Rush Medical College. Patients (the poor only) may be directed to the Central Free Dispensary, 1744 W. Harrison street on Mondays or Thursdays, from 2 to 3 p. m.

Dr. Frank H. Blackmarr desires to announce his return to office and hospital practice of Electro-Therapeutics—X-ray Therapy, Radium Therapy, X-ray Laboratory for rapid work. Office hours: 935 Marshall Field building, 8:30 a. m. to 9:30 a. m., telephone Private Exchange 1; 551 E. 47th street, 11 a. m. to 3 p. m., telephone Oakland 1719.

The Illinois Association for the Prevention of Tuberculosis.—This association met in Springfield, October 19, in conjunction with the Illinois State Conference of Charities and Correction. The chief subject for discussion was "Antituberculosis Work in the Smaller Cities," and the speakers were Dr. J. W. Pettit, of Ottawa, Ill., and Dr. George T. Palmer, of Springfield.

Retrenchment in Health Department.—Health Commissioner George B. Young has planned a practical method of retrenchment for his entire department. He has issued orders calling for lay-offs without pay, ranging from three days for field nurses, five days for supervising nurses and office secretaries and stenographers, seven days for the commissioner himself, assistant commissioner, secretary and bureau heads, and fifteen days for food inspectors.

Retail Druggists Endorse Red Cross Seal.—In its endorsement of the Red Cross Seal, first by the executive board and later upon October 8th, by the third quarterly meeting of the Chicago Retail Druggists' Association, it became assured that the druggists would again gladly cooperate in the sale of the Red Cross seals.

Physicians, by placing the Red Cross seals upon their December prescription blanks, not only attach an appropriate emblem, but also assist with renewed cooperation in the anti-tuberculosis campaign. Chicago Tuberculosis Institute.

The American Surgical Association has appointed a committee consisting of Drs. William L. Estes, South Bethlehem, Pa.; Thomas W. Huntingdon, San Francisco, Cal.; John B. Walker, New York City; Edward Martin, Philadelphia, and John B. Roberts, chairman, 313 South Seventeenth street, Philadelphia, to report on the Operative and Non-operative Treatment of Closed and Open Fractures of the Long Bones and the Value of Radiography in the Study of these Injuries. Surgeons who have published papers relating to this subject within the last ten years, will confer a favor by sending two reprints to the chairman of the committee. If no reprints are available the titles and places of their publication are desired. John B. Roberts, chairman, 313 South Seventeenth street, Philadelphia.

The Rhodes Scholarship.—Qualifying examinations were held last month for all candidates for the Oxford Rhodes scholarship. From those candidates who passed the examination held in Chicago at the Northwestern University building, a scholar will be selected for Illinois, who will begin work at Oxford in October, 1913.

A Rhodes scholar is appointed for a period of three years and receives the sum of fifteen hundred dollars each year. A Rhodes scholarship at Oxford is therefore a prize of greater money value than any scholarship or fellowship at any American university.

The candidate for a Rhodes scholarship must be an unmarried male citizen of the United States, with at least five years' domicile; must, by the first of October, 1913, have passed his nineteenth but not his twenty-fifth birthday, and must have completed at least his sophomore year at some recognized degree-granting university or college.

In accordance with the wishes of Mr. Cecil Rhodes, the committee of selection, in selecting a student for appointment to a scholarship, takes into consideration, (1) his literary and scholastic attainments; (2) his fondness for and success in manly outdoor sports, such as football and the like; (3) his qualities of manhood—truth, courage, devotion to duty, sympathy for and protection of the weak, kindliness, unselfishness and fellowship; and (4) his exhibition during school days of moral force of character and instincts to lead and to take an interest in his schoolmates.

THE
CHICAGO MEDICAL
RECORDER

DECEMBER, 1912.

Original Articles.

THE MEDICAL RESERVE CORPS—ITS DUTIES AND RELATIONS TO THE ARMY IN PEACE AND WAR.*

By W. B. BANISTER,

LIEUTENANT COLONEL MEDICAL CORPS, U. S. ARMY, SANITARY INSPECTOR, CENTRAL DIVISION.

The subject of the lecture this evening is: "The Medical Reserve Corps—Its Duties and Relations to the Army in Peace and War."

It has ever been the crowning glory of the medical profession that its members were primarily laborers in the vineyard of humanity, and whatever rewards followed those labors were of secondary consideration according to the ethics of our profession.

The surgeon does not patent surgical instruments which render operations possible or easier of accomplishment. The therapist does not patent therapeutic agents or measures which daily save the lives of thousands, and whatever of good springs from the genius or inventive faculty of the medical profession is published to the world for the benefit of humanity at large.

The physician and surgeon has usually been found at the front doing his share of the work both in time of war and pestilence, and I know of no class of men who make greater personal sacrifices in responding to their country's call than those of our profession, who must necessarily abandon a clientele which has probably required years of conscientious work and clean living to build up and which demands their presence and personal services to retain. When such an one, either under the infection of the war fever or the passive

*Presented at a meeting of the Association of the Medical Reserve Corps, U. S. A., Illinois Division, November 18, 1912.

impulsion of public opinion, goes to the front, his action is commendable. But when a body of men in the calm and dispassionate judgment of times of peace, band themselves together in such an organization as the Medical Reserve Corps, with the avowed purpose and intention of laying their services and talents on the altar of their country's cause in time of a national crisis, their action is admirable. And I consider one step in advance of those altruistic principles which I have referred to as constituting the ethics of our profession, and from the fact that you have inscribed your names in the list of members of such an organization, I feel sure that there lies within the secret chamber of the heart of each one of you, that sacred spark of patriotism to country which requires but a country's need to cause it to burst into a living flame, and that when the call shall sound you will be found maintaining the best traditions of our profession.

If I accent this idea of patriotism to a degree that may appear to you to partake of a mawkish sentimentality, I ask your indulgence for those of us who have lived our lives under the flag, and who never see it raised or lowered without some ceremony expressive of our respect for what it represents; for those of us who have followed it on foreign soils and have given the best of all that is in us for what it represents. And in this connection I desire to invite your attention to the words of the President on your commissions in which he states as his reason for commissioning the recipient, is his special trust and confidence in the patriotism, valor, fidelity and ability of the recipient.

It may appear strange to you that the President should have put ability last of all the required qualities, because in civil life you are accustomed to rate ability as of primary importance, as it commands all the good things of life. But when you consider that the President is commissioning the individual into a militant body, an army whose *raison d'être* is to fight battles and to win victories which necessarily entail dangers, hardships and personal sacrifices, you will understand that he has put ability in its proper sequence because it is patriotism that takes ability into the war; it is valor that takes ability to the firing line, and it is fidelity that keeps ability there. Without these qualities ability remains comfortably at home and is a negligible asset as far as the preservation of the health of the army and the care of the sick and wounded at the front is concerned.

When the holder of such a commission is called upon for active service and declines, what happens? Nothing; only that he forfeits his commission. What does this mean? It means that this special trust and confidence that the President has reposed in the patriotism,

valor and fidelity of the individual has been misplaced. He does not possess those qualities by reason of which the President has commissioned him. The commission has fallen into improper hands and therefore the President takes his commission back again. The ability remains the same but it is an ability which is to be devoted only to personal and selfish purposes and is not to be put at the service of one's country in her hour of need.

Who is there of us who can afford to surrender with this commission, patriotism, valor and fidelity, the qualities that make the real man? The President wanted primarily the real man and secondarily the able man.

Many of the people of our country teach and believe that our nation possesses such wealth and resources that no other nation would dare to attack us and that we would not wantonly attack any other nation. There would be therefore no other wars for us on any occasion to cultivate patriotism or to exercise it if cultivated, and besides, according to a remark made to me, there would be plenty of other men to go to the war. I desire in this connection to recall to your recollection the fact that since our struggle for independence we have had a war at least once in every thirty-five years and at times at shorter intervals, and this at a time too when our country was isolated and confined its activities within our own borders, nor was it a serious competitor in the commercial life of the world. But this has now all changed; we are no longer isolated. We have become a world power and have stepped beyond our own borders and have possessions in the Atlantic and the Pacific and almost abutting on the mainland of Asia, each one of which possessions may become possibly and probably an additional point of friction. Beside this we have become one of the most active and successful competitors in the commercial life of nations, and this has ever contained in the past one of the most pregnant causes of war, second only to that of a subject people thirsting for their independence.

I wonder how many men there were in England who thought there would be plenty of other men to go to the war on that 14th day of October, one thousand and sixty-six, when the Saxon King Harold was battling with all his might and main to hold back the Norman invasion of his country and sacrificed his life in the effort.

The stay-at-homes on that occasion not only lost their independence but their all, as their Norman conquerors took possession of all their lands as a legitimate reward of their ambition and their daring.

Turn over the pages of history and see how they are crowded with

incidents of the unforeseen and unexpected where wealth and resources seemed rather to invite war and interposed but too frail a barrier against the onset of patriotism and an undegenerated manhood.

"Who were they in the marble cities of Greece; in the purple court of Darius, and in the court of the Pharaoh of Egypt who ever for a moment supposed that a beardless youth from the bleak and barren hills of Macedonia would conquer, not only one, but all of them?

"Who were they in Rome, the mistress of the world, who ever for a moment supposed that the Goths and Vandals whose only wealth consisted of the skins of the wild animals that covered them and the swords and spears within their hands, could ever overthrow the seats of the mighty?

"Who were they in Europe who ever for a moment supposed that a fanatic from the deserts of Arabia could so fuse together the nomadic tribes of those desert wastes as to launch forth a wave of conquest that would reach to the walls of Vienna and only recede under the impact of the patriotic cavalry of John Sobieski of Poland, and which has left as an indication of its passage that portion of Europe known today as Turkey in Europe?" A country whose proper people with a rejuvenated patriotism which has suddenly flashed into view like a great beacon light in the night, are today hurling themselves in one living wave of valor on the Moslem ranks and striving to drive them back to the desert waste from which they came, and whose battle cry as they charge to close quarters is, "Now for the knife," suggesting a hatred engendered by five hundred years of subjection and humiliation.

They should not blame their conquerors for their misfortunes, for if they had exercised the same unanimity and patriotism in that earlier period as they are doing today they would have saved themselves five centuries of despotism, humiliation and the influences of an alien religion. But they too thought in that earlier period that there would be plenty of other men to go to the war.

"There is a people inhabiting a few rocky islands in the Pacific Ocean, relatively few in numbers, poor in wealth and resources. Who were they who ever for a moment supposed that they would hurl their puny strength against an empire of one hundred and twenty millions of people, vast in wealth and territorial expanse?" But through patriotism, military preparedness and military discipline they lowered the standard of the Russian Bear at Port Arthur and ran up in its stead the banner of the "Rising Sun" of Japan.

For these two latter instances you do not have to turn the pages of history. They have occurred within your own day and ken and are just as remarkable as any of the instances of the past.

But we like to think that the unpleasant lessons of history refer only to ancient times and to ancient conditions which can never be reproduced in our day, oblivious to the fact for the time that four thousand men landed on our Atlantic coast, captured our capitol city and burnt our public buildings as an additional sting to our defeat. But we do not like to think that such things could happen to us. Probably on the same principle that men think, "All men mortal but themselves." But the nations of the world are working under the same rule today that they did in the past, however much they may wrap it up in the language of diplomacy or in the claim of a benevolent assimilation: "The good old rule, the simple plan, of let him take who has the power, and let him keep who can," and as a matter of passing interest I can remember but one instance in history where a great man on the eve of his own and his country's triumph had a prophetic vision of that time when his own country might topple to her ruin in blood and ashes as that of his present victim, and that was Scipio Aemilianus, who as he gazed on the burning of Carthage quoted this passage from *The Iliad*,

"But come it will, the day decreed by fate;
How my heart trembles, while my tongue relates,
The day when thou Imperial Troy must bend,
And see thy warriors fall, thy glories end."

Never before in the history of armies has the medical staff of which you will form a part, occupied a position of such responsibility and importance as now, and in the present and future, campaigns will be won by commanding generals and their medical staff.

The idea may at once arise in your minds of how can we, non-combatants, influence the fortunes of a campaign or the history of an empire? And in order that I may acquit myself of any charge of exaggeration in the statement, I will recall to your recollection a few instances culled from the many, of how a knowledge of modern preventive medicine would have changed the fortunes of campaigns and the histories of empires in the past and will influence them in the present and future. I know of no more dramatic instance in history than that time when—

"The Assyrian came down like the wolf on the fold,
And his cohorts were gleaming in purple and gold;
And the sheen of their spears was like stars on the sea,
When the blue wave rolls nightly on deep Galilee."

City after city had fallen before them in Palestine, and flushed with victory and loaded with spoils and hungering for more they pushed on to Jerusalem, then under command of King Hezekiah with a garrison totally inadequate to stem the onrush of such a host of the then best soldiers in the world. They reached Jerusalem at sunset, completed the circumvalation of the city and went into camp in their positions with the intention of storming the city on the morrow. Can you not imagine the feelings of the watchers on the wall as day began to dawn and they peered through the uncertain light at that encircling coil of steel and barbarity, fascinated, yet dreading the oncoming of its enveloping folds, and as the day grew brighter, their surprise and superstitious awe at the quietude that surrounded them. No tramp, tramp of marching feet; no jingle of accouterments; no words of command; no trumpet calls; but there they lie, in that sleep "in which the wicked cease from troubling and the weary are at rest."

"There lay the rider distorted and pale,

With the dew on his brow and the rust on his mail;

And the tents were all silent, the banners alone,

The lances unlifted, the trumpets unblown."

One hundred and eighty thousand men dead in one night in what is now believed to have been the pneumonic type of bubonic plague, a preventable disease.

The historian tells us that Rome was saved by the "cackling of its geese." But the modern sanitarian knows from experience of modern armies in the same locality that Rome was saved by the pernicious character of her malaria fevers, a preventable disease.

Brennus advanced against Rome with an army of Gauls so numerous that the Romans despaired of defending their walls and consolidated their entire force on the Capitoline Hill where they were besieged, and now the fate of Rome hung by a thread and the sword arm was raised to sever it. But the arm never fell, for Brennus proposed to the Romans to ransom the city with a sum of gold and that he would then retire to his own country. But while the gold was being weighed out, a party of Romans who had become familiar with the condition of the army of the Gauls effected an entrance into the city. They removed the gold from the scales, attacked the Gauls, drove them from the city and routed them on their return. The army of Brennus was but a wreck and it was a stroke of genius on his part to attempt not only to obtain the Roman's gold, but also to obtain immunity from the Roman's attack on his retreat which he knew his army was too debilitated and reduced in numbers to successfully resist.

In 1775, the American colonies sent an expedition against Quebec, but all the gallantry of Montgomery and the dash of Arnold could not make up for the disparity in numbers resulting from the ravages of smallpox in the ranks of the American expeditionary force. And so this too resulted in failure and disappointment. An impartial student of history studying this campaign could not but conclude that Quebec, which at that time was ungarrisoned, would have fallen and with it Canada would have come into our possession, if Arnold's command had not been delayed by sickness, necessitating the sending back of strong detachments with the sick and thus being deprived both of his opportunity for surprise and a large part of the strength of his command.

Anyone of the scientific gentlemen present in my audience to-night could have prevented this eventuality by the simple operation of vaccination and thereby added to the territory of the United States an area equal to her own, and the star spangled banner would now be flying from the Arctic regions to the Rio Grande.

During our civil war, the deaths from preventable diseases was twice as great as that from wounds and during our Spanish-American war, we had twenty thousand cases of typhoid fever alone. You can readily understand how the absence of twenty thousand bayonets from a battlefield could easily change the fortunes of a campaign or the history of a nation. But during the eight months of the encampment of the maneuver division at San Antonio, during which time typhoid fever was present in San Antonio, only one light case occurred during the period of its encampment.

This scourge of the Anglo-Saxon race in campaign, being eliminated by anti-typhoid vaccination.

During the Russo-Japanese campaign, the deaths from preventable diseases for both armies were for the first time in the history of armies less than those from wounds, owing to the application of the modern principles of preventive medicine.

If the armies of Japan had been infected by epidemic diseases as have attended armies in the past, she would have lost her advantage of nearness to the theater of war and her numerical superiority which would probably have resulted in a different issue to the campaign and in the history of Japan.

As to your rewards I can promise you but little, for it is a well-known fact that commanding generals receive the credit or the glory for the achievements of their army and the nation the glory for the achievements of the medical staff.

Who are there among you that know the name of the medical director of the army of the Potomac in the latter years of the civil war, through whose genius order was brought out of chaos and the horrors and lingering deaths of the former campaigns of that war were changed to the comparative comfort of well equipped field hospitals and prompt removal of the wounded. This system embraces in its essential particulars the system that we use today, but the only monument that is raised to the memory of him who has done so much for his fellow-citizens is the naming of the general hospital in San Francisco—"The Letterman General Hospital," nearly fifty years after the achievement of his great work.

All of you have frequently heard the name of Kouropatkin, Oyama, Nogi and Kuroki, but how many of you have ever heard or seen the names of the chief surgeons of their respective armies, through whose foresight, and the application of the magic of modern preventive medicine, the figures of history, in regard to the incidence of deaths from diseases and those from wounds, have been reversed?

The Japanese nation has published far and wide and with pride the results of its sanitation in Manchuria, but as far at least as foreign countries go, we have not seen these results for which they are so proud, coupled with the names of the chief surgeons of their armies. So then the only reward that I can promise you is—"The consciousness of duty well performed" in behalf of that institution that we call our country.

So you can appreciate from what I have said to you tonight, that the relations of the Medical Reserve Corps to the army in peace, is that of a patriotic citizen availing himself of every opportunity that a busy life will permit to inform himself on that subject which will enable him the most efficiently to bear his share of the burdens of the state, "In times that try men's souls," and not to wait to see whether there will be plenty of other men to go to the war, for under the guidance of such an helmsman many a fair ship of state has foundered on the rocks.

When war is imminent or declared, it is quite probable that the first indication that you will receive that your services are required, will be an inquiry from the war department as to whether you will accept active service under your commission, and in the interval between this inquiry and the receipt of your order will be your time of peace in which to prepare for war by equipping yourself with a proper uniform of your grade and the personal equipment necessary for your comfort and welfare. It will be advisable for you to obtain what you

need in this regard from some military equipping establishment, one of which can usually be found in every large city of the country, who will furnish the articles required in accordance with the uniform regulations of the United States Army. There is a firm in this city who can so provide you with the necessities.

You will need a campaign hat; olive drab blouse; riding breeches; tan leggings and shoes or in lieu of the latter, tan riding boots; waist belt and saber; regulation riding gloves; spurs; an olive drab raincoat and a saddle cloth of the medical department and probably an olive drab overcoat.

Your bedding roll should consist of the following essentials: Gold medal cot; thin field mattress of appropriate size to fit the cot; pillows; at least two heavy blankets; some candles; folding candle sticks and a square of heavy brown duck. The duck should be of sufficient size to allow two feet on each side and each end of the field mattress when laid on it.

The other articles should be placed on this field mattress, the canvas folded over it, tightly rolled and held by two webbing straps, similar to trunk straps.

It would add somewhat to your comfort if you could also take a folding field chair and folding field table. It is also customary for officers to carry a dress-suit case and a steamer trunk which can be utilized while in camps of concentration and mobilization. But after you start with a marching column, you will probably be required to store this with the surplus baggage of your regiment. You would probably be ordered to report either to the commanding general of a division at some town near which the division was camped or to the commanding officer of a regiment and by letter to the commanding general of the division.

In reality you would report to the chief surgeon of the division and enter your name and address in a book in his office kept for that purpose so the chief surgeon would know where to forward the order for your assignment when made out. In some instances an advance order is made out at once (typewritten) and on receipt of that you could proceed to the regiment to which you were assigned. It usually takes two or three days to get out the printed order and during that period you could remain at your hotel.

When you go to report to your regiment, it would be advisable to leave your baggage at the hotel until you had reported and have been assigned a tent. On reporting to the surgeon of your regiment on arriving at camp, you should mention that you would like to report

and pay your respects to the commanding officer of the regiment. He would either go with you or send one of his assistants who would introduce you to the commanding officer in the latter's office.

It is not customary in the service on such an occasion to stand attention or salute but your conduct would be the same as on entering the office of one of your friends in the city. After a few moments of conversation in which you should take occasion to mention that you had come to report for duty and pay your respects to the commanding officer, on leaving his office, it would be proper and customary for you to inquire of the surgeon as to what messing facilities would be available to you and as to your assignment to a tent; and also to ask him to detail the member of the hospital corps detachment who will act as your mounted orderly on the march. He will take care of your tent and horse and such personal services as an officer requires, and it is customary if he takes care of your tent only to give him an honorarium of five dollars per month and if both your horse and tent an honorarium of ten dollars per month.

After being assigned your tent, you could then remove your baggage to camp without any feeling of embarrassment as to where to put it. If, in returning to camp at night after you have reported, some one calls out in the darkness, "Halt; who goes there?" You should halt and say, "Friend." The sentry who has challenged you will then say, "Advance friend and be recognized." You should then walk up to him and on recognizing you he will say, "Friend is recognized," and that permits you to pass on.

If there is a party with you, it is customary for the senior officer to answer, "Friend" to the challenge and to advance and be recognized by the sentry. If you are mounted, the sentry will say, "Dis-mount friend, advance and be recognized," and it will be necessary for you to comply with those directions.

In passing the colonel's tent in front of which the regimental colors are unfurled, in passing the colors you should uncover; and when a regiment passes you with its colors unfurled you should uncover when the colors get opposite you and remain uncovered until the colors have passed. You do not uncover if the colors are cased; that is, with a protecting cover over them either when in front of the colonel's tent or when carried by a marching regiment. At retreat, when the Star Spangled Banner is played, if outside of your tent, you should stand at attention and as the last note of the music sounds, bring your hand to your cap in salute.

It is customary in the service to call first on the commanding

officer socially soon after your arrival in camp (that is within a few days), but all other officers should call on you first.

Having instructed you into the customs of the service pertaining to camps in order to save you personal embarrassment and a feeling of being out of relation with your environment, I will in the next lecture in December describe to you the machine of which you will form a part; the lines of medical assistance and your personal duties in campaign and in action with your regiment, and also, a brief discussion of casualties in war, in order that you may obtain a comprehensive idea of the methods by which estimates are made of the number of the sanitary personnel, transportation and medical supplies that it will be necessary for the medical department to provide for in the campaign.

RAILROAD HOSPITAL ASSOCIATIONS.*

By FRANK ALLPORT, M. D., CHICAGO, ILL.

This paper is written with the intention of provoking a discussion on the best and most equitable manner of remunerating surgeons for services rendered railroad employes, etc.

I desire to say at the onset that I am not opposed to medical men working for large corporations under a previously understood agreement, provided such an agreement is fair and equitable to all parties concerned and can be continued with mutual and growing respect between employer and employe. All other forms of business and professions (including the legal profession), are often carried on under spoken or written articles of agreement. In commercial matters, the more responsible the purchaser and the larger the order, the cheaper can he buy goods. Architects, engineers, etc., reduce their fees when dealing with selected firms of high credit, who agree to give them constant occupation. Lawyers adjust their fees to harmonize with conditions when constantly employed by corporations giving them large amounts of work. Why, then, should not physicians and surgeons agree to render their services at reduced and specified prices to railroad and other corporations giving them constant employment, provided such fees are of a character to enable them to maintain their self-respect and the respect of others? Such remuneration may be in the nature of a salary, or may be paid for in accordance with the amount of work performed, but it should always be sufficient to bear inspection.

The company surgeon has a perfect right (when he reduces his compensation), to take into consideration four advantages undeniably connected with corporation work, viz.:

First, the pay is sure and prompt.

Second, his position as company surgeon inevitably leads to the acquirement of private patients, both connected and unconnected with the corporation.

Third, if his client is a railroad company he becomes possessed of certain transportation conveniences.

*Read before the American Association of Railway Surgeons, at Chicago, Oct. 16, 1912.

For a thorough exposition of this interesting subject, I beg leave to refer the reader to two valuable and interesting communications by Dr. W. H. Allport, of Chicago, in the January and February (1912) numbers of the "Journal of Political Economy," from which I have derived much of the information necessary to the writing of the present article.

Fourth, the extension of his professional horizon carries with it increased work, enhanced skill and enlarged acquaintance.

Nevertheless, in spite of all these advantages, he should honestly feel that he is receiving a fair compensation for his labors, as only by this precaution can he maintain his own respect and the respect of others and deal fairly with his professional brethren.

Having thus settled, in my own mind at least, the justifiability of medical men working for corporations desirous of giving them regular employment at properly reduced compensation, let us proceed to a consideration of the best and fairest manner of effecting such compensation.

The railroad usually employs a chief surgeon at a fixed salary, into whose hands (with varying limitations), the surgical work of the road is intrusted. Until of late years this work has consisted in the surgical and medical care of injured men, the examination of men for service, the surgical supervision of personal injury suits, the appointment of assistant district and local surgeons, auditing bills and issuing vouchers, inspecting and commenting on personal injury reports and transmitting the same to the claim and legal departments. The chief surgeon's assistants, resident in his own city, were usually paid a small but fixed salary, and most of the surgeons residing outside of the home city were usually given transportation and reduced but fixed fees for each individual case, or were compensated by the receipt of transportation and a small annual salary. Surgeons living in very small towns, where railroad cases are infrequent, were (with some roads) merely given transportation from time to time, as occasion arose. Many roads, however, invariably pay a small but definite fee for services rendered, no matter how small may be the size of the town. This method of dealing with railroad surgery has proven, on the whole, fairly satisfactory. It has been open, of course, to some abuses, but after all the surgeons were quite well satisfied, for they, as a rule, received fair compensation for their work, the men were contented because they were well cared for after injuries and the only participant to this tripartite arrangement which manifested evident symptoms of restlessness was the railroad, which was compelled to assume this financial responsibility, which, after all, was no more than its proper moral burden, considering its responsibilities and privileges. All railroads have doubtless suffered a multitude of impositions, and yet, after all, the care of its injured employes should be a duty which it is quite willing to assume, and which should be looked after with at least as much solicitude as is the repairing of its rolling stock, its rails and its

roadbed. I am free to say that, after a long experience in railroad work, it has been my observation that most railroads have conscientiously and cheerfully discharged their duty to their injured men, and if all roads would perform this portion of their business obligations with the same care and solicitude as is manifested by the Northwestern, the Rock Island, the Milwaukee, the Chicago & Eastern Illinois, and many others, there would be no occasion to write this paper, or to discuss it. But there has crept into railroad management during the last few years a desire on the part of a few railroads under the excuse of philanthropy to shift the financial burden of the injured employes onto the shoulders of the men themselves. Thus has come into existence the various hospital or beneficiary associations connected with a few of the roads. Most railroads, as I have already stated, still manfully carry their own burdens, and consider it their moral and business duty to care for their injured men, and it is to be hoped they will continue to do so; but there are danger signals in the air, and we who are railroad surgeons should do what we can to prevent the progress of an evil which, while still in its infancy, might easily grow until we all become the victims of an unfortunate miscarriage of justice.

Without going into details, these hospital associations are organizations that care for sick and injured railroad employes. The money for their support is raised by taxing each employe a certain sum (let us say fifty cents) a month, which is taken out of his own wages. Thus, for \$6.00 a year he becomes insured against medical and surgical services for practically all diseases and injuries, except those of a disgraceful character. These services the surgeons of the road are compelled to render for the small compensation which they receive. Under the ruling of some of these associations the men are compelled to accept membership, while in others this act is called voluntary, but it might as well be disclosed in its true light, for if a man does not join the association he is soon made to understand that he is a *persona non grata*. In some of the associations the road is released from personal damage suits the instant that benefits are accepted; in others this is not the case.

The management of the association and its finances are conducted practically by officers of the road; the low salaried men may, it is true, be represented on the board of management by one of their number, but it is reasonably certain that his influence will not be very far-reaching.

These associations were originally planned for the benefit (if it is

a benefit) of the poor men, the low salaried men of the road, but in at least one or two roads with which I am familiar the high salaried men from the president down have availed themselves of the privilege of membership, and I know of one high salaried official who required and secured the performance of a laparotomy, under the \$6.00 a year clause. When placed upon the defensive the roads seek refuge under the claim that they hold themselves responsible for any deficit that may arise from time to time in the management of the fund, but as a matter of fact it may be said that the membership fees are so arranged that there is practically no deficit; in fact, the truth is that in some roads there is a large surplus which, of course, is held in the hands of the management. Inasmuch as the railway officials retain practically the entire management of the hospital association, and the making and unmaking of its laws, they certainly have it within their power to arrange the amount of the assessments to harmonize with the average disbursements. No one need therefore waste any anxiety upon the railroad, as it can be safely trusted to emerge from a consideration of the annual association budget with a steady pulse and an undiminished confidence in its own financial sagacity.

Most of the railroads that have adopted the hospital association plan, voluntarily and ostentatiously contribute a few thousand dollars for its support; but even though this contribution is a large one (which it is reasonably safe to say it is not), it would almost surely fall far short of equalling the annual sickness, funeral and court expenses incidental to the old method of dealing with injured employees.

It will thus be seen that this adroit and ingenious scheme is a source of enormous saving to the road, as it almost, if not quite, entirely releases them from all financial obligations, so far as the care of their injured men is concerned. It can therefore be readily understood why some railroads are so enthusiastic over the plan, for under the ostensible purpose of benevolent and unselfish philanthropy, based upon the Samaritan-like desire to see that the poor employes are properly cared for when sick or ailing, and properly buried when dead, they have slipped in the clause that they shall be properly attended when injured in the service, and shall be properly examined for service from time to time, which lifts a great load of financial obligation from the back of the corporation. It can also be clearly comprehended why the men are satisfied, for by the payment of a small monthly assessment they are insured against practically all doctors', hospital and undertakers' bills, and are additionally compensated for the loss of an eye, a finger, a leg, etc.

A distinct objection to the plan, however, must be mentioned in considering matters from the standpoint of the employe, consisting in the inferiority of underpaid work. Under the hospital association plan the doctor is almost invariably insufficiently paid for his work, for it must be remembered that under this plan the doctor not only has to care for injuries received during service, but almost all other forms of physical disability as well. He is thus compelled to care for typhoid fever, pneumonia, enlarged prostates, diphtheria, cancers, appendicitis, senile cataracts, catarrh, dyspepsia, mastoid diseases, trachoma, deafness, the fitting of glasses, etc. In view of the fact that his pay is ridiculously small and that he is constantly being consulted by the men for real or fancied diseases because it costs them nothing to secure his services, he is sure to become imposed upon, disgruntled and discouraged, and under these circumstances cannot enter heartily into his work, nor render his best services. Thus, while the plan looks satisfactory to the insured man, he is reasonably certain sooner or later to receive unwilling and therefore inferior medical and surgical services.

I desire to briefly call attention to the commendatory association plan adopted by the Chicago & Eastern Illinois Railway. A low assessment is levied on each man and an actual annual deficit is paid by the railroad. The fund is employed for sick and death benefits, hospital and burial expenses. The company pays all doctors' bills and expects no release from personal injury litigation.

Another encouraging indication of the times is the fact that August 1, 1912, the hospital department of the Missouri Pacific & Iron Mountain System was turned over to the employes. The service is to be controlled by a board of hospital and service managers, to be composed of nine members selected from different departments of the railroad.

It has been interesting to myself, and might be to others, to read an article written by the superintendent of one of the largest railroad companies in this country, entitled "The Relief Department of the ——— Railroad; Its Advantages to the Company."

It is, of course, impossible to reproduce the entire article at this time, but I will make a few quotations from it to enable you to judge of the real mental attitude experienced by some railroad officials concerning the advantages of the hospital association plan to the railroad.

This gentleman begins his article by saying that "Probably the greatest advantage which the railroad company enjoys through the operation of the relief department—the one most far-reaching in its

effects—is the examination of applicants for employment, and the subsequent close observance of the men, by a corps of especially trained medical men.” In other words, the medical man is expected, not only to make the initial physical examination, but also to keep the men under constant surveillance, as to their bodily condition, habits, etc. This combined medical and detective work is meagerly paid for (when paid for at all, except by the presentation of a pass), out of the relief funds, thus affording the company an opportunity of obtaining highly valued services at the expense of the relief department. He then goes on to say that the existence of a relief department is a practical guarantee of immunity from damage suits. Statistics show that the relief department of this particular railroad company settled on a basis of benefits, “only 99.2 per cent of the accident injury cases, and 97 per cent of those, of accidental death.” It will be seen that this not only saves an enormous amount of money in damages alone, but, as this gentleman says, “The corps of claim agents is reduced, the expenses of the legal department greatly curtailed, and a great deal of unenviable notoriety is avoided in the trial of suits and the newspaper comments thereon.” Another item of great value to the road is its emancipation from the financial burden of caring for men who are suffering from injuries received in the discharge of their duty. He says: “The usual method of providing for such men is to carry them on the rolls at half pay. A relief department, especially if membership is compulsory on all classes of employes, relieves the company entirely of this expense.” Why would it not be a good idea to organize relief departments in all the various departments of railroad service, and compel the employes to obtain membership? Careful statistical calculations would enable the company to estimate their gross running expenses, and a per capita tax on all the employes could be levied under the guise of membership tickets in the various Relief Departments. In this way the company would experience “Relief” from all its financial obligations, and the receipts would be all profit. It is surprising that this pleasant little arrangement has been overlooked by some railroads, and I am confident that now the idea has been suggested the philanthropy of these roads will extend much further in the future than it has in the past.

This gentleman’s conception of the ease with which Doctors can be imposed upon is evidently quite well expressed in his recitation of the duties of the Company Surgeon. “He is required to attend, free of charge, all cases of accidental injury to employes, passengers, trespassers and others, occurring in any way in connection with the com-

pany's operations. His compensation consists only, in most cases, of an annual pass over the company's lines." He usually furnishes his own supplies. According to this Superintendent, the medical man is expected to use his influence in securing the best hospital accommodations for the smallest amount of money, to suggest to the widow of a dead employe that she pay out of the death benefits to have the remains "fixed up" (to use his illuminating and sympathetic language) and buried. He asserts with great satisfaction that "It is a rare thing for his railroad to have to pay an undertaker's bill on account of an employe." He further indicates what is expected of the Company Surgeon in the following language: "The Company Surgeon, by reason of their great numerical strength, and their high standing in private and public life, can be made an even more valuable asset to the Company. These men are, as above stated, usually the best qualified medical practitioners in their communities. They are influential in private life, and hold all sorts of political offices, from health officer, coroner, town councillor, or mayor, to members of the State and National Legislatures." It is not difficult to see what he means by this language, and, to speak plainly, his willingness, not to say eagerness, to prostitute the medical profession in any way, from inducing them to work without pay and performing detective and sleuth services upon the men, to imposing upon widows, and ravishing public offices, seems too evident to need emphasis. Another service expected of the Company Surgeon can, perhaps, be best expressed in their gentleman's own plain and unmistakable language: "Imagine a corps of several hundred men of influence, having peculiarly confidential relations with the employes, going into their families on occasions when they are especially susceptible to kindly acts, and it needs no straining of the vision to see what an immense amount of good to the Company may be accomplished. The family physician's advice is asked on all questions, and it does no harm to be on friendly terms with him. His influence has been known in many instances to counteract that of the ambulance chaser, to the advantage of both the Company and the man."

In other words, the Company Surgeon is to take advantage of his close and confidential relations with an injured man and his family at a time of shock and grief, for the purpose of inducing them to deal gently with the corporation. This gentleman's further conception of the Company Surgeon's duties and character can be further conceived by another sentence which occurs a little later in his article, as follows: "The management knows it can rely absolutely on reports as to the character and extent of personal injuries on account of which claims

are made; and when the trial comes on, if the doctor cannot conscientiously testify as the company would like to have him, he will at least do as little harm to its case as he can." Comments on the significance underlying this sentence seem to be entirely unnecessary. It is only to be regretted that this gentleman's acquaintance with the medical profession has been of such a character as to render it possible for him to express such sentiments. The value of the Relief Department to the railroad in question can, perhaps, be best summed up by the Superintendent's statement that "The whole cost, including Company's Surgeons' salaries, fees paid other surgeons and hospital expenses, was \$1.85 per case. These cases involved operations of all sorts, from the dressing of a bruised finger, to double amputations, trephining, etc. What a triumphant exhibition of high finance! It only costs \$1.85 per case to care for all injuries, operations, etc., small and great, and even this expense has been shifted from the back of the railroad to that of the men, and has been rendered possible by the grossly unfair remuneration of the medical staff. The Company evidently appreciates the services of the surgeons, and does not fail to use them in season and out of season for almost any kind of work they can induce them to perform. Then why, may I ask, does the Company not pay them at least decently for their legitimate services? I think the answer can only be found by estimating the character of the Company itself, and the motives and moral equation of those gentlemen at whose door can be laid the conception and execution of these plans.

Having looked at the matter from the standpoint of the corporation and the men, let us as briefly as possible view the plan from the standpoint of the Doctor. In the vernacular of the street, he is the "goat," for he gets the worst of the deal from all standpoints; everybody prospers at his expense, and yet the entire scheme is absolutely dependent upon his co-operation. Formerly an important element in his compensation resided in the fact that because he was a company doctor he did work for and collected fees from many company employes for the care of diseased conditions not dependent upon railroad accidents. This source of income is now taken from him entirely, for the men all belong to the Association and are at liberty to require his attendance upon them whenever they desire. Let me here present a concrete instance, which will illustrate the effect the Association plan may have upon the income of a railroad surgeon. I could offer many similar incidents, but one is enough to illustrate my meaning. I know an experienced eye and ear surgeon, living in a moderate-sized city in a neighboring state, who has for years worked for a certain

railroad running through his city. He was paid, according to what he did, and this averaged him about \$300.00 a year. Besides this, he could secure trip passes and had a good many railroad patients for non-traumatic diseases, which considerably increased his income. When the hospital association plan was started on his road, he was notified that he would receive the princely salary of \$10.00 a month, for which he would be required to not only care for all eye and ear injuries, but would have to care for all the eye and ear diseases of the men as well; he can still get trip passes upon application. In other words, his compensation from the road has been reduced and his work greatly increased, and much indirect financial compensation taken from him entirely. If this is a "square deal," it certainly does not accord with my own personal ideas of equity and justice. Of course, the first question to be asked is, "Why does he stand it?" "Why does he not resign?" This is a question that must be frequently asked, and its answer involves the greatest difficulty in the solution of this vexed problem, for, if the doctors would as a body arise and refuse to submit to such unjust, iniquitous and dangerous schemes, the entire project would dissolve into thin air, or the standards of compensation would be so raised that medical men could endorse the plan with no loss of self-respect. While the idea of contracting for a doctor's services must always be regarded with suspicion and reserve, the plan has evidently come to stay, and if this is true, the people who are the real sufferers, viz., the doctors, should refuse to submit to such unjust conditions.

The entire matter assumes the appearance of a crude insurance scheme, in which the essential laws of insurance and equity are grossly violated. No insurance company looking to the public for general patronage could exist a year under such conditions. It is only through the power that the railroad has over its employees, its arbitrary management of the insurance department, and the weakness of the medical profession that the Railway Hospital Association, as conducted by most companies, can exist over night. If the men desire sickness insurance, they can obtain it with very little additional expense, from good and reputable companies, which will not place them under any obligation to their railroad. Most insurance companies have, however, found it inexpedient (except where large premiums are paid), to insure men against all diseases. The diseases for which the insured are permitted to apply for relief are definitely stated, and the fees which the doctor is allowed to collect are stated with equal definiteness. It has been ascertained that only by laying down

strict rules of this nature can low-priced sickness insurance be perpetuated with fairness and equity to the insurance company, the wage-earner and the doctor. If this is true, it would hardly be expected that railroad companies could come to different conclusions, and, indeed, it may be answered, without fear of contradiction, that they could not continue such an arrangement at all if it was not for the co-operation of the doctors. The railroads employing the hospital Association plan (with few exceptions) buy the doctor's services for almost nothing, and thus are enabled to continue the operation of a sickness insurance plan, that would be utterly impossible if the doctors insisted upon receiving just and reasonable compensation for their labors.

It has been suggested that these associations should be for the benefit of poor men only, and that it should be distinctly understood that employes earning a salary of more than a certain amount are not available for membership. This would seem to be a suggestion that would occur to any fair-minded man, and should, of course, be adopted, as it would bar out much injustice and abuse of privilege; but, after all, it goes only a few steps in remedying the evil. In talking over the matter a short time ago with a prominent railroad official whose road has recently adopted the association plan, he calmly, and with the almost inevitable surrender of humanity to commercialism, so frequently observed in those dealing in purely financial affairs, delivered the edict that the entire matter was one purely of supply and demand, and must be settled along these lines. He declared that if the doctors were not satisfied with the idea and with their remuneration, they should resign, and that there would be no difficulty in filling their places. I told this gentleman that I was unfortunately aware of the willingness of one doctor to supplant another under such circumstances, but that this did not make it right for a corporation to underpay its employes merely because it had the power, any more than it is right for department stores to encourage prostitution by paying unlivable wages to their girls because they have the power to do as they please, knowing as they do that they can easily fill the position of a departing girl. If might makes right, then reformers, philosophers and philanthropists may as well fold up their tents and "quietly steal away."

The fact of the matter is that this unfortunate situation will have to be settled by the medical profession itself. A railroad that forms an association of this nature, by which it is relieved from the payment of its just bills for the care of its injured men, and at the

same time relieves itself from personal injury litigation by previously signed releases between the men and the road, a road which will scale down its doctors' bills to a point approaching invisibility, merely because they know they can, is a road with which it is merely wasting time to argue. It has chosen its course—it has performed a sharp financial transaction by which it saves thousands, and perhaps several hundred thousand dollars per annum, it passes in all the beauty of benevolence before its employes; why, therefore, should it submit to argument; why should it make any change in its plans, because, forsooth, the doctors are not satisfied? Why, indeed! If the doctors are not able to look after themselves, why should the road bother itself about them? If they are weak enough to be imposed upon; if they have not sufficient esprit de corps to stand by one another and refuse to supplant a brother surgeon, because he has had spirit enough to refuse to submit to unjust dictation; if doctors have not sufficient unanimity of thought and action to unite together and stand for righteousness and justice, then why should the railroad strain itself for the privilege of paying out large sums of money when such disbursements are entirely unnecessary? It can easily be seen that under these circumstances argument is useless, and that time and energy can be better expended by vigorous and repeated appeals to the medical profession itself, as has been done with rather bright prospects for the future by the doctors in England in their opposition to the Lloyd-George Insurance Bill. The author of this bill, in looking back over the business aspect of the medical profession, and observing what easy victims they have always been in the hands of sharpers, and how their ranks have always been torn asunder by internal dissensions and jealousies, naturally concluded he could make use of them in completing his insurance bill by suggesting, if not dictating, to them through Parliament what fees they should receive when practicing under the act. In this perfectly natural conclusion, however, he found himself mistaken, for, amazing as it may seem to even a casual observer of the past, the medical profession of Great Britain, acting under the auspices of the British Medical Association, developed astonishing powers of cohesion, held mass meetings, passed resolutions and did not desert them, and up to the present time have refused to submit to the remuneration clause in the insurance act. All praise to the British medical profession! They have demonstrated something that no one believed existed, viz., the ability of the medical profession to stand solidly together for what they believe to be their rights. The Lloyd-George's Insurance Act cannot exist without the

co-operation of the medical profession, neither can the Railway Hospital Association exist without the sanction of the medical profession. The doctor is absolutely essential to the success of both plans. Why then should not the doctor be treated with the consideration which is his just due? Why should he not be suitably remunerated for his services? Why should he be expected to meekly submit to getting the worst end of every step of such iniquitous transactions?

The question has been asked, Why does the surgeon not resign his position under the hospital association plan if he feels that he is being unfairly treated? There are a number of reasons why this step is so infrequently taken. In the first place, the surgeon has probably been connected with the road for years and dislikes to sever old ties and associations, especially as he hopes for better arrangements in the future. Then there is the wonderful and beloved pass, from which he hates to be separated. He perhaps hardly ever uses it, but he loves to look at it and to have others know that he has it, and then he can use it if he desires, and take beautiful and desirable trips to distant parts of the country. He cannot bear to part with it, especially as he knows quite well that if he does, some hated and objectionable professional rival would soon glory in its possession. He retains his position, then, on account of old associations, to retain his pass, because he hopes for better arrangements in the future, because it does furnish him a little sure and ready money, because he wants to keep the position away from somebody else, and because there is a certain amount of distinction incidental to the connection. These reasons are, of course, utterly insufficient and inadequate as an excuse for the surgeon to retain a position through which he sacrifices his self-respect and lowers his professional standard, but I believe them to be a truthful representation of the reasons why the surgeon continues to submit to the unfair dictation of a Railroad Hospital Association. These reasons, however, do not relieve the railroad from its moral obligation to its surgeon, nor does it alter the fact that such unfair treatment results necessarily in the frequent employment of poor surgeons, and even half-hearted service from good surgeons, which is, of course, a bad thing for both the road and the men. Doctors are, as is well-known, the most charitable people in the world; they are constantly and cheerfully and freely giving their services to the poor gratuitously, but there seems to be no reason why they should regard railroads as objects of charity or semi-charity.

To my mind, the most menacing feature of the situation is the outlook for the future. It may not matter so much that the railroad

or that corporation is placed on the hospital association plan; the question is, To what extent will this plan become adopted in the future? The storm of disapproval and opposition on the part of the medical profession towards the Lloyd-George General Insurance Bill is of recent occurrence and well-known; but it may not be so well understood that the working out of this plan in some other European countries has produced disastrous but logical results to the medical profession.

The broad general plan of contract practice has been very generally used in various continental countries for years, and assumes the form of an association insuring its clients against the expense of sickness, hospitals, death, funerals, etc. It usually applies not only to the man of the family, but to his dependent household as well. The underpaid physician is, of course, a necessary element to the plan, and under its sinister influence the average income of physicians in Austria, Bohemia, Germany, etc., is reduced to perhaps about \$400.00 a year; while in England, with no such conditions existing (at least, up to the present time), the average income of medical men is \$3,600 per annum. This can be easily understood when it is known that in the city of Freiburg an association of this kind has been in existence for some years, and out of 16,000 families in the city, 14,000 are insured. This has reduced medical fees to the association doctors to such an extent that office calls are valued at 15 cents, house calls about 30 cents, night visit 96 cents, minor surgical operations about 35 cents, larger surgical operations about \$3.00, normal childbirth \$1.20, difficult obstetric cases about \$3.00. Other cities in these countries show that medical fees for association doctors are about the same as in Freiburg, and it follows as a perfectly natural sequence that the fees of those medical men who are not employed by these associations are inevitably forced downward as a direct result of such fees as those just enumerated. An especially menacing feature of this plan is that rich people are beginning to obtain membership in these associations, and thus it would seem that the last hope of the unfortunate doctor was being surely taken from him, and that he must soon seek some other and more self-respecting and profitable means of existence.

It is to be hoped that the remuneration for medical services in America will not be dragged down to the degrading level produced in Europe under the baneful influence of some forms of contract practice; but it would be of interest to know just how much a Railroad Hospital Association surgeon in America receives on an average for

office and house visits, operations, etc. I will venture to say that if most of these surgeons would compute this problem, they would be surprised at, and ashamed of, the result.

It must not be forgotten that this paper refers merely to the hospital, or beneficiary associations of railroad corporations; it was not intended to discuss the broad, general plan of the contract practice; and I have only referred to the deplorable conditions in Europe for the purpose of demonstrating the inevitable result of contract practice when uncontrolled by a high sense of moral obligations.

Just what effect the new Workmen's Compensation Act will have upon the hospital association plan remains to be seen, but it is to be hoped it will put it out of business, although such an optimistic view of the future is hardly to be expected. It would not be necessary to wait for such development if the doctors could be made to realize the power of medical combination. They absolutely hold the key to the situation; it is only necessary for them to use it with determination, tempered with reason and justice.

Directly connected with the subject of this paper comes the news from England that there is a distinct shortage of medical students in that country, which is occasioning acute unrest on the part of medical college authorities. There seem to be several reasons for this peculiar condition of affairs. First, the standard of medical education has grown much higher of late years; five years are now required for a medical education instead of four years, and this means a year's more time for study and the expenditure of probably \$1,000 of extra money. Consequently many men have decided to seek other avenues of work, especially as the future of the practice of medicine and surgery is anything but flattering, from a financial standpoint. There can be no doubt, moreover, that the Lloyd-George Insurance Act has had a most depressing effect upon men who have contemplated entering medical schools. This has been so marked that the number of entries has decreased from 1,495 in 1910 to 1,232 in 1911. Such a decrease has never been seen before, and has undoubtedly been occasioned by the insurance act and its sinister and humiliating influence on medical and surgical fees. Viewed in the light of the Lloyd-George Insurance Act, the medical insurance companies on the continent, the medical insurance organizations of railroads and other corporations in this country, a man must indeed be mentally astigmatic who cannot see that the remunerations and prizes incident to the practice of medicine will, unless better conditions develop, soon cease to attract the attention of level-headed men seeking for a life

vocation. Some of you will doubtless be glad to see the ranks of the doctors thin out, and this may really be an advantage up to a certain point, but beyond that point the depleting process should not be allowed to extend. We must have at least a sufficient number of good doctors to care for the world's sick, but unless suitable remuneration is evident, impossible as it may seem now, there will eventually be a shortage in the medical profession.

In now leaving this subject for your consideration I beg to state that out of the chaotic conditions surrounding this vexed situation, I have been able to arrive at several conclusions that seem to me should be carefully considered by the parties identified with all sides of the controversy:

First: A railroad medical fee bill should be established by medical associations. In doing so we should remember it is proper for obvious reasons that regularly employed railway surgeons may considerably reduce their fees to railroads for services rendered. The amount, however, should not be improperly low, and should be fair and reasonable to both employer and employee. There has always been something mysterious about this subject, and it has never been a matter that has been openly understood as it should be. It is not expected that this fee bill will ever be universally used (there are always some men who prefer to work in the dark), but it would at least establish a standard and give an open expression of opinion from those who are best able to judge of what are the minimum fees which can be accepted by self-respecting railway surgeons.

Second: The method at present in vogue with most railroads, whereby surgeons either receive reasonable fees for services rendered or receive a reasonable salary, is a fairly satisfactory plan, and should be continued until a distinctly better method can be demonstrated.

Third: Any plan should be discountenanced by the medical profession which seeks to reduce an already low remuneration by endeavoring to confer benefits to railroads or their employees at the cost of the medical profession.

Fourth: All railway insurance associations, by which employees are insured against all forms of injuries or sickness, are detrimental to the interests of the medical profession and should be discouraged. The diseases for which men may apply for relief should be carefully selected and definitely stated. This should relieve the doctors from caring for disgraceful diseases, most contagious diseases, and the innumerable partially or entirely imaginary diseases indulged in by poorly balanced and neurotic individuals who delight in haunting

doctors' offices, especially where they can indulge in this morbid privilege without the payment of a fee.

Fifth: If railroad hospital associations are formed, adequate representation of both surgeons and employes should appear upon their advisory boards. Only men drawing small salaries should be admitted to membership, and the remuneration to surgeons should consist in adequate salaries or in payment for actual services rendered, based upon a low, but reasonable, fee bill. Employes should never be asked or required to sign personal injury releases to the company upon receiving benefits from the association, nor should they be required to become members of the association unless they themselves desire to effect such an alliance.

Sixth: It is useless to endeavor to abolish the broad general idea underlying contract practice; it, like the locomotive and the automobile, has come to stay. Our efforts should be directed along the line of regulation instead of along the line of suppression.

7 WEST MADISON ST.

KOCHER'S INGUINAL HERNIA OPERATION.

By WELLER VAN HOOK, A. B., M. D.

In America the popularity of the Bassini operation is almost absolute. Its rationality and simplicity leave nothing to be desired in all well-marked cases of inguinal hernia.

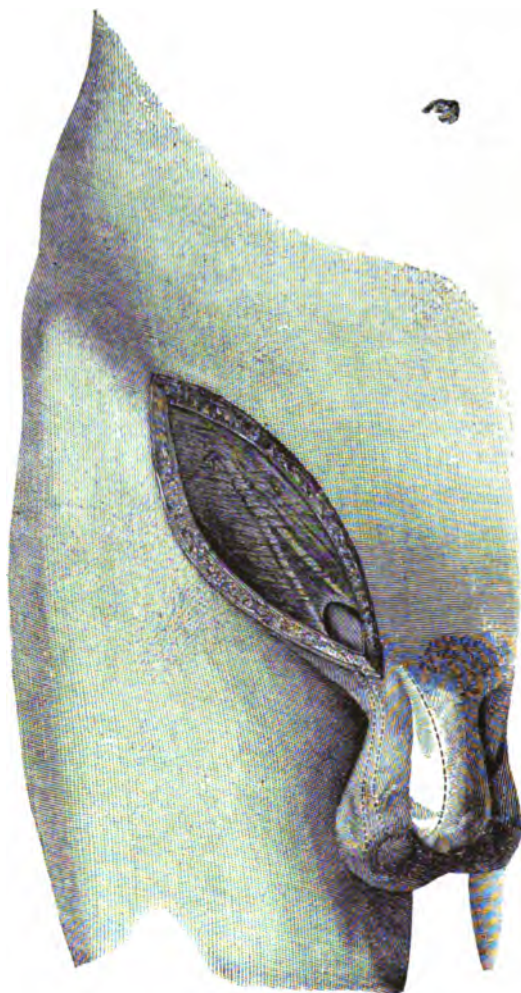


Fig. 1. The Aponeurosis Exposed with the Pillars Showing Through.

There are some conditions under which, however, the essentials of the Kocher technique find just application. First let us ask what are the principles upon which the operation is based. They are

(1) suturing together the sides of the canal through the infolded anterior wall, after (2) the strong repression of the cord against the posterior wall. To remove the mass of the sac and at the same time utilize its stump it is (3) loosened and displaced so that it projects

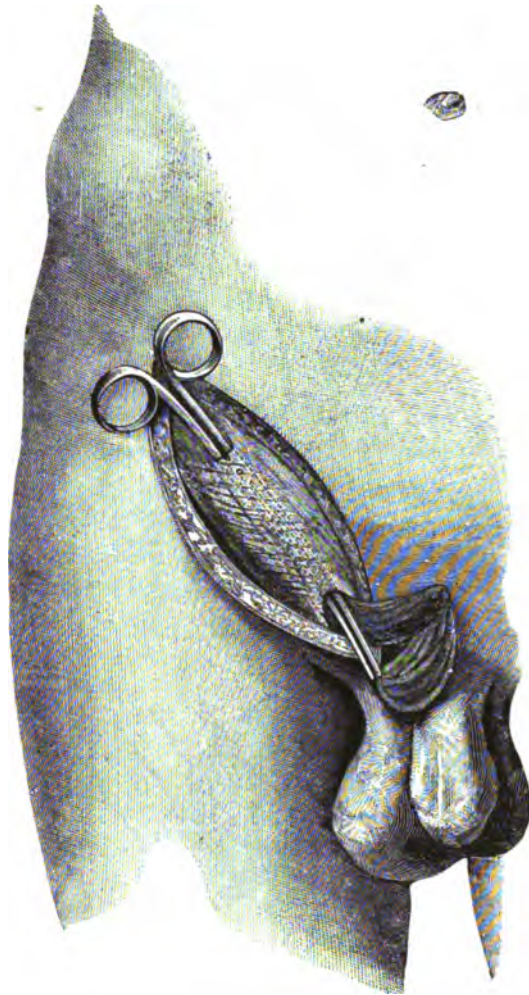


Fig. 2. The Sac Grasped by a Forceps Passed Down the Canal.

through a small slit in the anterior canal wall where it is amputated and its stump fixed to the deep tissues with a suture:

The steps of the operation are: the separation of the sac from its attachments without splitting the anterior canal wall; the retraction of the sac through a small opening in the anterior canal wall

near the internal ring and the application of the retaining suture; the suturing of the posterior wall under repression of the anterior wall and the cord with the finger. See Figure 4.

Professor Kocher, while urging the simplicity and effectiveness of



Fig. 3. The Sac Drawn Back Along the Canal and Brought Out Through an Opening in the Aponeurosis.

the operation in almost all cases, admits that there are some hernias which it is best to treat by the very direct method of Bassini.

The present writer has long reserved for the admirable Kocher method those cases of evident diastasis of the inguinal canal walls in which there is as yet no well-marked sac but a bulging mass yielding an impulse to the finger when the patient coughs. Such condi-

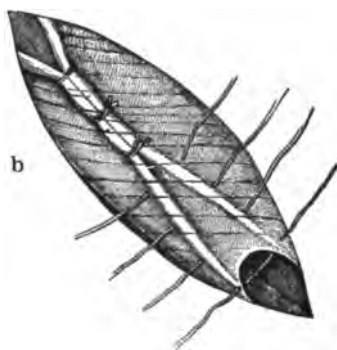


Fig. 4. The Sutures in Place.

tions are very common in those suffering from fully developed hernias elsewhere.

When, therefore, especially in cases of well-marked hernia at another point, an inguinal canal is found to be patulous, and evidently weakly supported but not containing a hernial sac it is wise to make

use of the Kocher method of suturing. The technique is important. With a little practice it can be carried out in a few moments. The absence of a sac renders the operation trivial.

The usual inguinal incision is made and, if necessary, the epigastric vessels secured. The aponeurosis is bared by quick dissection with the knife-handle or Kocher's dissector.

The forefinger of the left hand next depresses the anterior inguinal wall. This causes the pillars of the canal to stand out distinctly, the conjoined tendon and the edges of the muscles which act on it on the inside and Poupart's ligament on the outside. It will be understood that these two columns stand out as distinct folds and, the finger protecting the cord by depressing it, the stitches may easily be passed.

This is done by picking up one fold after the other with a full-curved needle armed with strong chromicised catgut and so tying across that the columns are well approximated.

Several practical points are to be borne in mind in the use of these sutures:

- (1) The catgut must be as described.
- (2) Three knots are to be tied in each suture.
- (3) The sutures must be sufficiently numerous to insure primary agglutination and scarring of the tissues approximated by them.

The quickness and ease of application of this method make it one of easily and frequently applicable utility, and its results are most gratifying.

31 N. STATE ST.

TUBERCULIN AS AN ADJUNCT IN THE SANATORIUM
TREATMENT OF PULMONARY TUBERCULOSIS—A
REPORT OF SIXTY-THREE CASES TREATED WITH
TUBERCULINUM PURUM.

By J. W. COON, M. D.

Superintendent of the Wisconsin State Sanatorium for Tuberculosis,
Wales, Wis.

The therapeutic use of tuberculin in pulmonary tuberculosis, as an adjunct to general treatment, was begun at this institution in the spring of 1909. It was not undertaken with any idea of curing the disease *cito, tute et jucunde*, but rather in the hope that, to a certain extent and for a time at least, it would aid in arresting sluggish and progressive tuberculous processes by arousing defensive activity in the foci.

The first aim was to avoid sporadic occurrences of ill effects such as might offset whatever good was otherwise accomplished, and therefore one of the milder tuberculins was employed, namely the Russian tuberculinum purum which is reputed to be fairly free from causing fever and distress. According to "New and Non-Official Remedies," this tuberculin is, "the purified filtered extract of human tubercle bacilli in 50 per cent glycerin, prepared in the same way as in Koch's old tuberculin, but subsequently treated with alcohol, ether, chloroform and xylol in order to remove deutoalbumoses."

The tuberculin was used in all stages of the disease, but the progression in the dosage was cautious and any elevation of temperature was regarded as a warning signal. It is perhaps due to this fact that no ill effects are to be reported. The only signs of systemic reaction were occasional rises of temperature within twenty-four hours after an injection; these were more prone to occur with the earlier and smaller doses than with the later and larger ones. The injections were given at intervals of about four days, the site being the intrascapular space, alternating right and left. The first dose was usually 1/200 mg. and the final dose, reached within ten or twelve weeks, was often as high as 100 mg. In some of the cases a second course of injections, beginning again with a small dose, was subsequently given. A difficulty encountered was that the family circumstances of many of the patients coming to this institution were such that they often refused to stay a sufficient length of time. Many that were discharged improved, would doubtless have derived considerable further benefit if they had consented to remain a few months longer.

The patients were given the excellent "tuberculin records" de-

vised by Trudeau, and were instructed in keeping them properly. Their sputa were carefully examined from time to time and classified according to Von Gaffky's scheme. More than two-thirds of the cases belonged in classes VI to IX.

In the second biennial report of the Wisconsin State Sanatorium for the period of July 1, 1908, to June 30, 1910, the experience with tuberculinum purum to that date was summarized as follows:

"Of the forty-seven cases treated for more than thirty days with tuberculin, forty-three, or 91.5 per cent, were discharged improved; while of the remaining cases but 70 per cent were discharged improved. It is realized, of course, that the number of cases treated with tuberculin is much too small to admit any positive conclusions relative to the benefits from its use, but so far as they can be judged they are entirely in favor of the use of tuberculin in suitable cases and under careful supervision."

This opinion has not changed during the past year to any extent. Clinically the impression has been gained that the tuberculin was of use in opposing the progress of the disease, improving the condition of the patients and contributing to a more favorable course; and this conclusion is borne out by the records kept of the cases, showing improvement in temperature, pulse, sputum, physical signs and weight. Many of the patients had been at the sanatorium for months without great apparent benefit, and their gain soon after the first injection was unmistakable. In view of the number of cases treated, the histories cannot be given in detail, and hence a tabulation, which affords a general survey of the effects in the three stages of the disease, is herewith presented.

TABLE I.—EFFECTS OF TUBERCULIN IN INCIPIENT CASES.

Case No.	Patient Received	T. P. Begun	Temperature Aver. Before	Temperature Aver. After	Sputum Aver. Before	(Gaffky) Aver. After	Weight (lbs.) Aver. Before	Weight (lbs.) Aver. After	Cond. After T. P.
1	Aug., '09	Oct., '09	98.4	98.6	IV	I	178.5	191.5	Cured
2	Sept., '09	Oct., '09	98.5	98.4	Neg.	Neg.	100	108.5	Arr.
3	Oct., '09	Oct., '09	98.4	98.6	IX	Neg.	135.5	144	Arr.
4	July, '09	Sept., '09	99.4	99	VII	III	142	146	Arr.
5	Oct., '09	Oct., '09	99	98.8	IX	VIII	145.5	152	Arr.
6	June, '09	Aug., '09	99.8	98.4	VIII	V	149	168.5	Arr.
7	Sept., '09	Aug., '09	98.3	98.5	IV	Neg.	89	108	Imp.
8	Oct., '09	Oct., '09	98.6	98.8	III	III	127.5	141	Arr.
9	Oct., '09	Nov., '09	100.4	100.1	IX	IX	109.5	110	Unimp.
10	June, '09	Sept., '09	99	98.8	Neg.	Neg.	124	125	Arr.
11	July, '09	Aug., '09	101.4	99.8	IX	VIII	118	121	Arr.

Average deviation of temperature from normal in incipient cases—

Before tuberculin treatment..... 0.81° F.

After tuberculin treatment..... 0.39° F.

Average of tubercle bacilli in sputum, Von Gaffky classification—

Before tuberculin treatment..... 5.68

After tuberculin treatment..... 3.36

Average gain in weight for all incipient cases..... 8.5 lbs.

Number of incipient cases apparently cured	1
Number of incipient cases arrested	8
Number of incipient cases improved	1
Number of incipient cases unimproved	1
Number of incipient cases dead	0

Total 11

TABLE II.—EFFECTS OF TUBERCULIN IN MODERATELY ADVANCED CASES.

Case No.	Patient Received	T. P. Begun	Temperature		Sputum (Gaffky)		Weight (lbs.)		Cond. After T. P.
			Aver. Before	Aver. After	Aver. Before	Aver. After	Aver. Before	Aver. After	
12	June, '09	Nov., '09	100.1	99.6	VII	VIII	146	145.5	Arr.
13	Oct., '09	Oct., '09	99.6	99.6	VIII	VIII	107	111.5	Unimp.
14	Oct., '08	Aug., '09	100.1	99.8	IX	X	105	101.0	Imp.
15	Apr., '09	July, '09	100.2	98.8	VII	IV	100	107.0	Arr.
16	July, '09	Sept., '09	98.6	98.0	VIII	VIII	109.5	122.0	Imp.
17	Sept., '09	Sept., '09	98.6	98.8	Neg.	Neg.	101	118.0	Cured
18	Dec., '08	Sept., '09	100.0	98.2	V	Neg.	152.5	160.0	Cured
19	July, '09	Aug., '09	102.0	100.2	VII	V	92	108.0	Imp.
20	June, '09	Oct., '09	99.4	99.0	V	X	102	106	Arr.
21	June, '09	Aug., '09	99.2	97.8	Neg.	I	89.5	92	Arr.
22	Oct., '09	Oct., '09	98.8	98.5	VI	X	108.5	107.5	Arr.
23	June, '09	Aug., '09	100.6	98.4	X	I	112.5	128.0	Arr.
24	June, '09	Sept., '09	99.4	98.6	VIII	VII	148	154.5	Arr.
25	Aug., '09	Oct., '09	99.2	99.0	VII	VII	126	126.5	Unimp.
26	Aug., '09	Oct., '09	99.2	99.0	VII	VIII	120.5	122	Arr.
27	Aug., '09	Oct., '09	98.6	99.0	IX	IX	147	152.0	Arr.
28	June, '09	Oct., '09	101.4	100.1	VII	IX	108	110.0	Unimp.
29	Oct., '09	Oct., '09	98.4	98.5	IX	IX	105	111.0	Imp.
30	Oct., '09	Oct., '09	98.0	98.0	VII	VI	144.5	162.0	Imp.
31	May, '09	Aug., '09	100.4	98.4	Neg.	Neg.	121	122.0	Arr.
32	Sept., '09	Oct., '09	100.6	100.4	IX	VIII	108	110.0	Imp.
33	Jan., '09	Aug., '09	101.0	98.6	V	VII	102	94.5	Dead
34	Apr., '09	Aug., '09	100.0	98.6	VIII	VII	122.5	129.0	Arr.
35	June, '09	Aug., '09	99.4	99.2	VIII	IX	125	128.5	Imp.
36	Dec., '08	Aug., '09	99.8	99.0	IX	IX	125	129	Arr.
37	Oct., '09	Nov., '09	99.2	99.0	IX	IX	108.5	109	Unimp.

Case No.	Patient Received	T. P. Begun	Temperature		Sputum (Gaffky)		Weight (lbs.)		Cond. After T. P.
			Aver. Before	Aver. After	Aver. Before	Aver. After	Aver. Before	Aver. After	
38	Feb., '09	Aug., '09	101	99.2	VII	V	122	122	Imp.
39	Feb., '09	Aug., '09	100	99.2	VI	VI	119	112	Imp.
40	June, '09	Oct., '09	99	99	I	IV	150	152.5	Arr.
41	Oct., '09	Oct., '09	98.6	98	VI	IX	140	150	Imp.
42	Oct., '09	Oct., '09	98.6	98.6	X	IX	140	146.5	Arr.
43	July, '09	Aug., '09	99.2	99.4	VIII	VII	147.5	148.5	Arr.
44	Nov., '09	Nov., '09	99.4	100	X	X	108	108	Unimp.
45	Mar., '09	Oct., '09	100.8	101	IX	VIII	100.5	101.5	Dead
46	Aug., '09	Oct., '09	99	98.6	Neg.	Neg.	140	151	Imp.
47	Feb., '09	Aug., '09	99.8	98.6	VIII	IX	127.5	128.5	Arr.
48	Mar., '09	Aug., '09	100.1	98.6	IX	VIII	108.5	112	Imp.
49	Jan., '09	Aug., '09	100.1	98	VIII	IX	125.5	124.5	Arr.
50	Sept., '09	Oct., '09	98.5	98.6	Neg.	Neg.	121.5	126	Imp.
51	Oct., '09	Oct., '09	99	98.6	VI	VI	126	145	Arr.
52	Aug., '09	Sept., '09	98.4	98.6	Neg.	Neg.	106.5	117	Cured
53	Oct., '09	Dec., '09	98.5	98.6	IX	IX	86.5	86	Arr.
54	May, '09	July, '09	101.1	99.4	IX	VII	105	106	Arr.
55	Jan., '09	July, '09	99.6	99.8	VIII	VII	82	82	Arr.
56	Oct., '09	Oct., '09	102	98.2	Neg.	Neg.	122	129.5	Arr.

Average deviation of temperature from normal in moderately advanced cases—
 Before T. P. 0.89° F.
 After T. P. 0.43° F.

Average of tubercle bacilli in sputum of moderately advanced cases (Gaffky)—
 Before T. P. 5.2
 After T. P. 5.0

Average gain in weight for moderately advanced cases 1.8 lbs.

Number of patients apparently cured	3
Number of patients arrested	22
Number of patients improved	12
Number of patients unimproved	5
Number of patients dead	2

Total of moderately advanced cases 45

TABLE III.—EFFECTS OF TUBERCULINUM PURUM IN FAR ADVANCED CASES.

Case No.	Patient	T. P.	Temperature	Sputum	Weight	Cond.
	Received	Began	Aver. Before	Aver. After	Aver. Before	After T. P.
57	Aug., '08	Aug., '09	100	98	III Neg.	109.5 112.5 Arr.
58	Jan., '09	Aug., '09	100.3	98.6	VII VII	119 113 Arr.
59	Mar., '09	July, '09	100.3	99	IX IX	103 99.5 Unimp.
60	Aug., '09	Sept., '09	100.3	99	VIII VIII	114 118 Imp.
61	Nov., '08	Aug., '09	100.2	99	VIII VIII	120 126.5 Arr.
62	July, '09	Aug., '09	100.6	98.6	IX IX	150 150 Imp.
63	July, '09	July, '09	100.8	99.8	X IX	81 75 Arr.

Average deviation of temperature in far advanced cases—

Before T. P. 2.0° F.
After T. P. 0.3° F.

Average of tubercle bacilli in sputum of far advanced cases (Gaffky)—

Before T. P. 7.7
After T. P. 7.1

Average loss of weight in far advanced cases. 0.7 lbs.

Number of patients apparently cured 0
 Number of patients arrested 4
 Number of patients improved 2
 Number of patients unimproved 1
 Number of patients dead 0

Total of far advanced cases. 7

Reviewing these statistics, it appears that a reduction of fever, when present, generally occurred. The number of bacteria in the sputum did not diminish very greatly during the treatment, but often a sudden diminution would take place about a month or six weeks after the last injection. Some gain in weight occurred in fifty out of the sixty-three cases; this was naturally greatest in the incipient cases, while in the far advanced cases there was as much loss as gain in weight.

The percentage of the condition after the treatment are as follows:

	Incipient Cases	Mod. Advanced Cases	Far Advanced Cases	All Cases
Apparently cured.....				
Arrested	72.7%	49.0%	57.2%	52.8%
Improved	9.1%	29.0%	28.4%	27.9%
Unimproved	9.1%	11.3%	14.4%	10.8%
Died	0.0%	4.4%	0.0%	3.0%

One of the two patients who died was in a hopeless condition from the first and received but a few injections at irregular intervals, in the attempt to ease him subjectively.

While the percentage of improvement compares favorably with that in the cases not treated with tuberculin, the material is, of course, too small to enable a definite conclusion. Moreover, it remains to be seen in how many of the cases the results are really lasting, and whether, in case of relapse, a new course of tuberculin treatment would continue to prove beneficial.

A striking illustration of the importance of early diagnosis and treatment is afforded by the difference in the results when the cases were in the early stages and in the later ones.

It is especially difficult to say how much was accomplished by the tuberculin because all the patients lived out of doors practically the whole time and were on a wholesome, nutritious diet, with careful supervision of rest and exercise. What advantage tuberculinum purum may possess, lies in the fact that its comparative mildness of action enables a more steadily ascending dosage and allows of its use even in far advanced cases not suited for other tuberculins. The severe and sometimes dangerous reactions which may occur with old tuberculin have been noted in no single instance of the large number of injections of tuberculinum purum given at this institution. To establish its status, however, much further investigation is required, and expectations must be kept within moderate bounds in order to avoid disappointment. Certainly the use of tuberculin does not make possible the slightest relaxation in the rules for correct mode of living and constant care, and it must be confined to properly selected cases always under close observation.

SOME VALUABLE SPUTUMANALYSES WHICH MAY BE APPLIED WITHOUT THE USE OF A MICROSCOPE.

By B. G. WILLIAMS, M. D.

AUTHOR OF "LABORATORY METHODS, WITH SPECIAL REFERENCE TO THE NEEDS OF THE GENERAL PRACTITIONER," ETC.

It is my opinion that every physician should own a microscope. The cost of these instruments has been so reduced that they are in the reach of the average practitioner, especially the man who does not hesitate to equip himself with other diagnostic apparatus.

But inasmuch as this ideal condition of affairs has not as yet been realized, I have decided to point out to the physician that all knowledge that may be gained from a sputumanalysis does not depend upon the use of a microscope. So that while we are equipping ourselves for microscopic work, we should not neglect this other department; and in our searches for the tubercle bacillus we must not overlook the fact that before the existence of bacteria were known, tuberculosis was often diagnosticated by the sputum examinations. (M. Donn , Cours de Microscopie.)

Older writers gave much attention not only to the presence and character of pus in the sputum but to its physical characteristics and especially in regard to its color, odor and consistency. To them the foul, sweet odor meant cavity formation with stagnation, and pus which was raised by hawking usually meant pulmonary involvement. The green lumps were expected in influenza, the pink or rusty sputum in pneumonia and the black and yellow masses in certain cases of tuberculosis.

But ignoring these evidences which may be perceived by the sense of sight or smell, there are several other procedures which may prove of great value to diagnosis. Among these are the examinations of suspicious bits of tissue for evidences of "coughed up lung" chemical tests for microscopic hemorrhages and the albumin tests. Indeed there is much more in the proper microscopy of the sputum than the search for the acid fast bacilli; and often as much may be gained as by an analysis of the urine. Every sputum tells a story.

Best Blood Test.—Although any of the ordinary tests for blood may be applied, I have come to prefer the use of a modified guaiac reaction, and this may be used as follows: Shake up a piece of gum guaiac in some alcohol. When it is judged that a strong tincture of this resin has been formed, add about a dram of it to a dram of the sputum (which has previously been boiled and then a drop of am-

monia has been added). The mixture will appear turbid or milky. Now add three drops of reliable hydrogen peroxide and shake thoroughly. A blue or green color will indicate the presence of hemoglobin.

Albumin Test.—Soluble albumin in the sputum, is identified much in same manner as in the urine. But because of the presence of mucus, specimens of sputum are filtered with difficulty so that it is necessary to modify the technic somewhat. In a large test tube, five drams of physiologic salt solution, five c.c. of sputum and five drops of acetic acid are well shaken for five minutes. It is easy to commit to memory this technic when the quantities are thus remembered in fives, though the measurements do not need to be accurate. Shake well, filter and test the filtrate for albumin by any of the tests which may be applied for albumin in the urine. In chronic cases where nephritis and valvular lesions may be ruled out, the positive reaction invariably means tuberculosis of the lungs as it is not met in chronic bronchitis. In acute cases, it is of less value as it is generally present.

"Coughed Up Lung."—By using the following technic, it is not difficult to identify elastic tissue from the lung without the use of a compound microscope, though a good reading glass is necessary. The sputum is poured upon a glass plate which in turn, lies on a black background. Against this, the pieces of lung tissue appear as pinkish yellow or reddish white bits of material. Now attempt to break these up with a needle. If they are brittle they may be ignored, inasmuch as bits of elastic tissue are teased into pieces only with difficulty and show a rubber like resistance to the needle. A bit of material which shows these properties, may be selected out, pressed flat between a couple of slides or pieces of window glass and examined in the light by aid of a reading glass for evidences of connective tissue structure. With a little practice, a physician may become quite expert in this work, although a good microscope is not to be despised when giving a final opinion.

Miscellaneous Examinations.—In many cases the physician may desire to determine the origin of a sputum. The following method will not differentiate pulmonary and nasal secretions but will usually decide between bronchial material and that which comes from pulmonary cavities. Thus it must be known that the material has not dropped from the pharyngeal vault but has been raised by hawking. Into a glass cylinder or test tube of tapwater (or into a tumbler of tapwater), drop some of the sample in such a manner that it does not touch or adhere to the side of the glass. If it floats, it is doubtless

of bronchial origin, but if it sinks and a pharyngeal source can be ruled out, it comes from a cavity. The principle involved is easily comprehended. In the bronchi, the sputum is saturated with air which alters the specific gravity to such an extent that it may be floated on the water. The patient may carry out this test daily and report to the physician and a close touch kept upon this disease. Sputum cups which contain 10 per cent formalin do not seem to modify the value of the test and sterilize the sputum at the same time.

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Editorial.

HEALTH EDUCATION.

Dr. William A. Evans, the indefatigable writer and lecturer upon questions relating to personal hygiene and public health, has been giving a series of free lectures to men at the Y. M. C. A. Hall, Chicago, every Wednesday at the noon hour. That there is a demand for such lectures is instanced by the crowded houses that greeted the eloquent Doctor.

The topics covered in the lectures were heredity of physical character and of mental and moral characteristics, the elimination of the unfit, the effect upon parenthood of race or occupational poisons, a higher quality of life, and raising the standards of marriage. The public is indebted to Dr. Evans for this course of lectures, and the medical profession is honored by having in its ranks a leader of such energy and power in the cause of social medical service that just now is looming large upon the horizon.

MRS. JOHN A. LOGAN.

This remarkable and brilliant woman, who belongs first of all to the state of Illinois, though the whole Nation claims her, is writing a most interesting series of "Recollections of a Soldier's Wife." These articles are appearing in the *Cosmopolitan*, commencing with the December issue, and we know all of our readers will be glad to get this information. We take pleasure in republishing the editor's note:

"Few women have known as many of their country's notables, been as keen watchers of its struggles toward national greatness, as the author of these 'Recollections.' Mrs. Logan lived in Illinois and her father and husband were public men when Lincoln and Douglas debated the issues that were soon put to the test of battle. She sat at President Buchanan's table with the man who became President of the Confederacy. During the war she went with her distinguished husband wherever she could, meeting the big men of the Western armies—men who later put down the rebellion. After the war, during General Logan's brilliant career in Washington, she knew the statesmen, big and little, who played their parts in the Reconstruction and its aftermath of bitter feeling. Finally she has seen the representatives of all sections meet without a difference. To the nation's capital comes, sooner or later, most of those whom history will mention. On Mrs. Logan's roster of her friends and acquaintances are an appreciable majority of those who have passed that way since 1859. We know of no one whose life-story could be more interesting or more important. The 'Recollections of a Soldier's Wife' will continue during a large part of the coming year."

We know of no better investment any physician can make for the coming year than securing these articles, written by a woman whom we all love and admire—the first lady in our hearts, Mrs. John A. Logan! May God bless her and spare her to us for many years to come.

SCHOOL FOR EPILEPTICS

The Chicago Board of Education are considering the advisability of establishing a special school for epileptics, who are now excluded from school because of their affliction. The committee on school management report two hundred and ninety such children of school age, and it is proposed to create a school with dormitory and boarding facilities and equipped to give the special treatment and instruction required in such cases. It is to be hoped the board will be able to inaugurate this much needed work.

NEW ERA IN MEDICINE.

Medicine has always taught the necessity of the prevention of disease and has always lent a helping hand toward every effort that has been made for the alleviation of human misery. Reluctantly the State took up the work of public health and sanitation, driven thereto by the havoc of epidemics. The utility and success of that work is reflected in lessened sickness and reduced mortality rates, and there are now none to dispute its value.

Physicians who have kept in touch with current events cannot fail to have noticed the widespread unrest as to all conditions that affect human welfare and the growing desire to relieve them. The great success of medicine in the healing of disease and its prevention in recent years, has set the public to thinking, and it has set the statesmen to thinking that something can be done and should be done to prevent the poverty, crime, degradation and degeneracy that is so apparent in our large cities. The great German nation has a system of social insurance with governmental aid that has at least eliminated the charity hospital. Every inmate of a hospital now must pay something toward his care and treatment, and through the social insurance every patron of a hospital is able to pay toward his care.

In England the Lloyd-George Bill, a startlingly radical measure for conservative England, for the aid of the poor, was enacted. The bill in some of its features bore heavily upon the revenues of physicians, although the physicians were not in any way consulted. The British Medical Association took up the question, and the battle they waged made the Government wince and come to terms with better proposals. The controversy is still on and the treasury of the Association is well nigh bankrupt by the expense.

How soon similar action may be taken in our own Legislatures or Congress it is not possible to say, but it is probably much nearer than we think. One of the great political parties, as we noted in the September number of the *MEDICAL RECORDER*, made the question in its broad phase its cardinal plank, and scores of orators expounded it from a thousand platforms and in every part of the country. In our last number we pointed out that there were indications that the President-Elect "sees the handwriting upon the wall."

The work of charity organizations, of housing committees, of all beneficiary organizations, of school inspection, of the disability insurance of the International Harvester Company, of all the wire companies, of the social workers everywhere are embraced in the problem. The live interest of American womanhood in all human welfare, the

rapid advance toward universal suffrage, all tend to hasten a solution, for the topic is one that quickly appeals to the feminine mind.

The time to discuss such legislation is before it is enacted and not afterward. The medical profession in America is no more prepared today than were their British brothers before the passage of the Lloyd-George Act. They must at once get ready and be able to give intelligent aid when the time does come, and help shape the destiny of legislation and their own. As we view it, such far-reaching legislation should make more work for physicians and not less, and more work means greater revenue and greater worth. Suppose all those with defective eyesight were to apply for treatment and correction, have we oculists enough? Suppose all with deafness, throat and nose trouble, nervous and mental defects should apply, have we aurists, laryngologists and alienists enough to do the work? And so on through the whole list of diseases, have we doctors enough to do the business? We answer, not by fifty per cent.

Perhaps the American Medical Association will take up the question at their annual meeting next June, but whether they do or not the medical profession should at once begin an organization to prepare themselves and the public to meet the demand that will be surely made upon them in the near future.

Book Reviews

THE DISEASES OF INFANCY AND CHILDHOOD. For the Use of Students and Practitioners of Medicine. By L. Emmett Holt, M. D., Sc. D., LL. D., Professor of Diseases of Children in the College of Physicians and Surgeons (Columbia University), New York; Attending Physician to the Babies' and Foundling Hospitals, New York, etc., etc. Assisted by John Howland, A. B., M. D., Professor of Diseases of Children in Washington University, St. Louis. Sixth Edition, Fully Revised. With Two Hundred and Forty Illustrations, Including Eight Colored Plates. New York and London: D. Appleton & Company.

With due regard to the various excellent text books on Diseases of Children, it must be conceded that Holt's treatise is today the most popular work on Pediatrics in the English language. It is in fact the standard work, and whatever Holt says is authoritative. We find that the present edition has been very thoroughly revised, and much new matter has been added. Some articles have been completely rewritten.

Special additions will be found in the important chapters upon nutrition and infant feeding; also in the alimentary affections, such as appendicitis, peritonitis, and intestinal intoxicants; the important topic of acuto poliomyelitis has been enlarged upon, likewise hereditary syphilis. In short, almost every chapter shows evidences of revision. A number of new illustrations have likewise been added. The author has shown his characteristic appreciation and courtesy by associating with him in this edition his former assistant, Dr. Howland, as co-editor. Where commendation is unnecessary, we can only express our appreciation of this splendid work.

RACE-IMPROVEMENT, OR EUGENICS. By La Reine Helen Baker. New York: Dodd, Mead & Co. Price, \$1.00 net.

The subject of Eugenics being a comparatively new one, it is no easy task to direct the attention of the general public to its merits. To the intelligent reader there is no more interesting or wider reaching subject offered at the present day than that of race-improvement.

The aims of the eugenists are of the loftiest character; their plans are various; their literature at present is rather meagre. We therefore welcome every new contribution to this modern philosophy. The present volume is written "to interest the American public in an important and neglected subject," and it well may do so, as its presents in forceful style many of the theories and objects of the professed eugenists.

DISEASES OF CHILDREN. A Practical Treatise on Diagnosis and Treatment, for the Use of Students and Practitioners of Medicine. By Benjamin Knox Rachford, Professor of Diseases of Children, Ohio-Miami Medical College, Department of Medicine of the University of Cincinnati; Pediatrician to the Cincinnati Hospital, Good Samaritan Hospital, and Jewish Hospital; Ex-President of the American Pediatric Society, and Member of the Association of American Physicians, New York: D. Appleton & Co. Price, \$5.00.

This book is a happy medium between the standard treatises on Children by Rotch, Holt, etc., and the smaller compendiums. The author gives special attention to differential diagnosis and treatment. The latter especially is very complete, and the omissions are generally few, although we would suggest to the author to include such desirable preparations, for instance, as pelletierine in the treatment of tenia in preference to filix-mas, which is so much harder to administer, especially to young children. Not enough stress also is laid upon

the preparatory treatment. On the other hand, the author recommends too many drugs at times, as for instance in pneumonia. The very important topic of diabetis in children is only accorded one page, a fault the author shares with other standard writers. Aside, however, from such defects, the book is well written and very satisfactory. The chapters on the child, diseases of the new-born, infant feeding, infectious diseases, are especially to be commended. The illustrations are good, the book is fully up to date, and safe and sound in its teachings. We cordially endorse it.

THE AMERICAN OCCUPATION OF THE PHILIPPINES, 1898-1912. By James H. Blount, Officer U. S. Volunteers in the Philippines, 1899-1901; U. S. District Judge in the Philippines, 1901-1905. New York: G. P. Putnam's Sons. 1912.

We wish every citizen of the United States could be furnished a copy of this splendid book and thus learn from a recognized authority and unbiased source the true history of the Philippines and our shameless occupancy of these islands. It is a national disgrace, and how few of our voters know that these islands have already cost us over \$300,000,000, keeping up high prices here and receiving no benefits whatever in return.

We are unquestionably a nation of pious hypocrites, bellowing about freedom and liberty on one hand and tyrannizing at the same time over a helpless people calling for liberty. We free Cuba and oppress the Filipinos. Why? The author, who was U. S. District Judge for four years in the Philippines, gives the reason in a nutshell: "The Filipinos will not be fit for independence in ten, twenty, or a hundred years, if it be left to American colonial office holders drawing good salaries to determine the question."

As Admiral Dewey has stated: "The Filipinos are far superior in their intelligence and more capable of self-government than the people of Cuba, and I am familiar with both races."

We trust the President-elect will read this work and show that he is a statesman indeed by getting rid of this curse to the American nation, this cesspool of iniquity. Either liberate the Filipinos, and guarantee their independence by neutralization treaties with the other Powers, or entrust the colonization scheme to the Japanese. But let us get out with our mob of office holders, grafters and cormorants, and apply the Monroe doctrine to ourselves. Listen to the immortal Grover Cleveland: "The government of remote and alien people should have no permanent place in the purposes of our national life."

EDUCATIONAL PROBLEMS. By G. Stanley Hall, Ph.D., LL.D., President of Clark University and Professor of Psychology and Pedagogy. In two volumes. New York. D. Appleton & Company. 1911.

Perhaps no man in this country or any other has done more for education than Stanley Hall. He brings to its problems not only ripe experience but a better judgment and a broader view than any other American writer. Every physician would be particularly interested in his study of adolescence. The present two volumes consist practically of a number of essays upon educational problems, but they are so arranged as to furnish a continuous treatise upon those questions which are likely to interest physicians and parents in the education of children.

The questions of kindergarten, the educational value of dancing, music, religious training and moral education are taken up in order. The question of prevarication and lies, of sex and of industrial education furnish the three concluding chapters of the first volume. No parent who has come in contact with these problems can fail to be greatly enlightened by the masterly exposition of the subject at the hands of the author. Under each subject they have not only the writer's personal observations, but the text is enriched by the results of many series of question-letters which have been intelligently collated, so that a clear view of the situation is obtained. The breadth of the author's investigation and the wealth of material he has as a basis for his views are extraordinary. At times his style will be found a little repellant from the somewhat extravagant vocabulary employed, but when he arrives at practical considerations and the exposition of plans and methods, his clearness is beyond question and above praise.

In the second volume his study of the budding girl will probably be found the most popular part of the books. The novelty of his views, sustained as they are by documents of unquestioned value, will be illuminating and even startling to those who have not had a parallel experience. The pedagogical value of history, elementary mathematics, reading, drawing, geography, are taken up in the same satisfactory and characteristic manner. The defects of American teachers and of our public schools are set forth ruthlessly. The author from his early years has been an enthusiastic admirer of German methods, but one must feel that his point of view is not narrowed by German prejudice.

No teacher of the young who aims to be at all well informed on

methods of proper instruction can fail to find in these two volumes the very best that is anywhere presented in the English language on the subjects of which the author treats.

PHYSICAL DIAGNOSIS. By Richard C. Cabot, M. D., Assistant Professor of Medicine in Harvard University. Fifth Edition. Revised and Enlarged, with five Plates and 268 Figures in the Text. New York: William Wood & Company. Price, \$3.00 net.

The chief merit of this popular work is its individuality. The author teaches only what he knows himself and is thoroughly familiar with, omitting such topics, for instance, as cystoscopy, ophthalmoscopy and laryngoscopy on account of his lack of the mastery of these methods. But whatever he does recommend, he does from personal experience, thereby becoming on terms of personal intimacy with his reader, which is the great charm of this book. It is the ideal book for students and general practitioners, being so thoroughly practical. This edition shows considerable revision and additions in the chapters on Blood Pressure, Phlebogram and Arteriogram, in Neoplasms of the Lung and Pleura, Peptic Ulcer, etc. We cordially commend Cabot's work to all who desire a compact, reliable and up-to-date guide in physical diagnosis.

ALCOHOL AND OFFICIALS. By Colonel L. Mervin Maus, U. S. A., Medical Corps.

This is a most interesting reprint, and in our judgment proves the author's argument that even the moderate use of alcohol lowers health and efficiency, and should be prohibited among officers and officials of the military, naval, and civil services in the United States. The distinguished author gives sixty-three arguments to prove the above contention, and seven conclusions based on the most important psychological and pathological effects of alcohol. In fact, we would go a step further and make the manufacture, sale, and distribution of alcoholic liquors in any form a felony, punishable by life imprisonment and solitary confinement. Alcohol is without question the root of all evil, the direct cause of most crimes of every description, the greatest of all curses which can afflict mankind, the direct cause of poverty, misery, dishonesty and destitution. We most heartily commend Colonel Maus' efforts to prohibit its use in the U. S. Army.

A PRACTICAL MEDICAL DICTIONARY. By Thomas Lathrop Stedman, A. M., M. D., Editor of "Twentieth Century Practice of Medicine"; Editor of the Medical Record. Second, Revised Edition.

Illustrated. New York: William Wood & Company. 1912. Price, \$1.50 net, plain; \$5.00 net, indexed.

This is an exceptionally good dictionary. It is sufficiently complete, and is particularly valuable in the fact that it is up-to-date and contains many new words and definitions not found elsewhere. This edition contains over two thousand new titles and subtitles, besides some other new matter. Special attention has been paid to synonyms and the etymology of words used; definitions of chemical, botanical, dental and veterinary words have been included; also the composition of the most important American and European spas. We cordially commend this work, and would suggest the indexed copy as being more convenient and handy.

MAKING GOOD ON PRIVATE DUTY. By Harriet Camp Lounsberry, R. N., President West Virginia State Nurses' Association, Sanitary School Inspector for Charleston Independent School District. Philadelphia: J. B. Lippincott Company. Price, \$1.00 net.

This book reminds us of that famous book, "The Physician Himself." It is equally good, full of good sense, practical instruction, noble thoughts and high incentives. Every nurse will feel better for reading it, and we trust it will have the wide circulation which it most richly deserves.

A MONTESSORI MOTHER. By Dorothy Canfield Fisher. Illustrated. New York: Henry Holt and Company. 1912.

A capable and entertaining exposition of the Montessori system, written in the easy style of one thoroughly conversant with the subject in hand. The author has had ample opportunity to view the working out of the various ideas and apparatus used in the Casa dei Bambini and enjoys the personal friendship of Mme. Montessori. Her exhortation to lay humanity to make practical the discoveries of scientific investigators like Mme. Montessori is very convincing, and the book is replete with unique applications of the system to the training of our own children in our own homes. To all who are interested in the child of today and what he will be tomorrow, this book is heartily recommended with the promise of keen enjoyment in the manner of its writing.

THE MONTESSORI SYSTEM. In Theory and Practice. By Dr. Theodate L. Smith. Harper & Brothers, Publishers. 1912.

We have had the Montessori system served to us in many forms in the past few months, since the popular interest was first stimulated

by the articles appearing in McClure's magazine, but here we have the practical application to American children in an American school, by a student of psychology and pedagogy. There are several schools in the United States adopting, in whole or in part, the principles of this system based on the complete liberty of the child and entailing a training of separate sensory, motor and mental capacities, and leading to rapid, easy and substantial mastery of the elements of reading, writing and arithmetic. Much of the apparatus used has been adapted from that originally used so successfully in the training of defectives. That the Montessori system is well worth consideration must be appreciated by anyone reading this comprehensive little volume by Dr. Theodate Smith.

BREWING. By A. Chaston Chapman, President of the Institute of Brewing, Fellow of the Institute of Chemistry of Great Britain and Ireland, Fellow of the Chemical Society. Cambridge: At the University Press. New York: G. P. Putnam's Sons. 1912. Price, 40 cents.

This one of the Cambridge Manuals will be of interest to many who are not directly concerned in the manufacture of beers. Indeed, the author expressly states that the book is not intended to serve as a text book for the student of brewing, and still less as a handbook for the practical brewer. But it is a fact that the process of brewing involves so many chemical and biological questions, that a study of it will do much to make clear many problems that would otherwise be most obscure to the general reader. The wonderful facts that are involved in the process of fermentation, the action upon starch by diastase, the biological study of the life of grain, are all fundamental problems in the study of brewing, and in this book are made plain in language intelligible to the layman. It will be found exceedingly interesting as a piece of collateral reading.

THE PSYCHOLOGY OF INSANITY. By Bernard Hart, M. D. (Lond.), Lecturer in Psychiatry University College Hospital Medical School; Medical Superintendent Northumberland House Asylum. Cambridge: At the University Press. New York: G. P. Putnam's Sons. 1912. Price, 40 cents.

The author in this very interesting and readable book approaches the subject of insanity purely from the psychological standpoint, but does not place himself at variance with those who look at it through physiological eyes. He brings to the consideration of the subject the newer conceptions of psychology and particularly the application of

Freudian doctrine, which, however, he does not accept in its entirety. He does recognize the value of mental suppression of certain unfortunate or uncomfortable experiences and the reappearance of such repressed ideas in changed form. He very clearly indicates that this doctrine is not applicable to all forms of insanity, and at present only to a very limited portion of the field, but thinks naturally and properly enough that it serves to unlock some of the secret places and thereby to give a better conception of the mental workings of the insane, with a prospect in certain instances of relieving them from the tangled web of their mental vagaries.

THE WELLOOME PHOTOGRAPHIC EXPOSURE RECORD AND DIARY, 1913.

To boil down into one handy pocket volume the accumulated photographic wisdom of the year and of preceding years is a work of signal utility and one which should win the gratitude of all photographers. Such a task has been accomplished in the 1913 edition of the "Wellcome" Photographic Exposure Record which is just published. Within its closely packed pages this book contains a surprising number of useful and practical paragraphs for the field, the dark room, and the studio. This Record may be obtained from all photographic dealers and booksellers, and at all railway bookstalls. Price in the United States, 50 cents.

THE CHEERFULNESS OF DEATH. By W. W. Keen, M. D., LL. D.
Philadelphia: The Griffith & Rowland Press. 1912.

This little booklet emphasizes to the laity the fact, well known to physicians, that death is in the great majority of instances not accompanied by pain or other distress, and that the death agony so vividly depicted by certain writers lies rather in the feeling of the survivors—the friends and relatives—than in any sensation suffered by the dying person. Dr. Keen also draws a beautiful word picture of what dying should mean in a spiritual sense, both to the stricken individual and to those to whom he is dear. In the Christian faith it should not be a time of unmitigated sorrow, but the grief natural to a long separation should be lightened by the knowledge that the dying person is laying down a heavy burden and is to enter upon a new life of great happiness.

Coming from the eminent authority that it does, this should bring a world of comfort both mental and spiritual to many a sufferer. It should relieve the apprehensions and fears of those who, through their vivid imaginations, die a thousand deaths, each one more painful than the actuality will ever be. These few pages, dealing with a subject of paramount importance to every man, are fully

as worthy in their way of the high reputation of one of America's great surgeons as the work he has accomplished along professional lines.

News Items

For Rent.—Office hours in very desirable rooms in physician's suite. Room 705, 15 East Washington street, Venetian building, Chicago.

For Rent.—Office hours in a newly finished and newly furnished suite. Attendant furnished. Dr. John L. Porter, 907 Chicago Savings Bank building, 7 West Madison street.

Kissell, Kinnicutt & Co.—Announcement is made by Kissell, Kinnicutt & Co. of the opening of their new office, 1000 The Rookery. This Chicago branch is under the management of Mr. Robert Stevenson, Jr., formerly with Lee, Higginson & Co.

Wanted—Young medical student or doctor to correspond with us about a new way of money and friends making in the health and efficiency promoting line. Address Geo. A. Schmidt (IT) Co., 236-238 North avenue, Chicago. Established 1875.

Personal.—Dr. Fenton B. Turck has removed his office from 37 East Cedar street, Chicago, to 14 E. 53rd street, New York City. Dr. Turck is locating in New York as a director of a research laboratory founded to further the study of the cause and treatment of diseases of the digestive tract.

Doctor H. W. Powers has resigned his position as Medical Superintendent of the Kenilworth Sanitarium, Kenilworth, Illinois, to engage in general practice in Wilmette, Illinois.

The position made vacant at the Kenilworth Sanitarium by Doctor Powers' resignation has been filled by the appointment of Doctor Sherman Brown, formerly assistant physician of the Kings Park State Hospital at Kings Park, Long Island, New York.

Dr. Frank H. Blackmarr desires to announce his return to office and hospital practice of Electro-Therapeutics, X-Ray Therapy, Radium Therapy, X-ray Laboratory for rapid work. Office hours: 935 Marshall Field building, 8:30 a. m. to 9:30 a. m., telephone Private Exchange 1; 551 E. 47th street, 11 a. m. to 3 p. m., telephone Oakland 1719.

Saunders Company Change Location.—W. B. Saunders Company, medical publishers, are now established in their new building on West Washington Square—an ideal site right in the heart of Philadelphia's new publishing center.

The remarkable success of this house and the rapid growth of their

business, with the increased facilities which this growth demanded, necessitated removal to larger quarters. They therefore erected a seven-story building, housing all their departments under one roof.

Constructed of reinforced concrete, the building is absolutely fire-proof and equipped with every modern aid for the manufacture and distribution of medical books and for the comfort and convenience of their employes.

A cordial invitation is extended the profession to inspect the new plant.

Publishers' Announcement.—Beginning with the January, nineteen hundred and thirteen, number, the name of *Current Literature* will be changed to *Current Opinion*.

The size of page will also be changed. The type-page will be enlarged to seven inches by ten, about the dimensions of the magazine a number of years ago.

These changes are made solely because the editors and business managers are agreed that the changes will improve the magazine and enlarge its usefulness. There will be no change of consequence in the editorial conduct of the magazine or in its ownership.

For twenty-five years *Current Literature* has stood before the country for enlightenment, liberality, culture and progress. With an audience larger than ever before and a field more ample, it changes its name but not the high purposes for which it was founded by its first owner and editor, Frederick Somers, and which animated its subsequent editors, Harold Goodwin, George W. Cable, Bliss Carman, William Bayard Hale, William George Jordan and Charles B. Spahr.

A Nurses Registry.—Physicians in this city will be interested to know that Truax, Green & Co. have established a Nurses' Registry, in which they have enrolled many of Chicago's most competent and carefully trained nurses. The selection has been made with great care, seeking proper credentials and recommendation.

The purpose of this department is to furnish graduate, post-graduate, under-graduate, practical and hourly nurses, also invalids' companions, and attendants, male and female, day or night. The registry is free to the nurse and should prove of inestimable value to the surgeon in emergency as well as regular cases. It is under the supervision of a physician and a post-graduate nurse.

Physicians are invited to visit this "Nurses' Department." Any suggestion or advice that would make it more complete in every detail would be appreciated.

Wabash Valley Sanitarium.—We take pleasure in calling the attention of the profession to the following letter from the Wabash Valley Sanitarium:

Dear Doctor:—

We wish to call your attention again to this Sanitarium. Recently at a meeting of the Mississippi Valley Medical Association our Mr. Castle brought our work before the physicians in attendance by aid of

exhibit. We wish to thank you for giving him your name; we are herewith enclosing a booklet which we hope will not find its way to the waste basket.

Our work is conducted in a thoroughly scientific manner. We do not consider ourselves on the plane of the ordinary watering place, or of a health resort. As you will note, we are prepared to care for all kinds of cases except those of the contagious diseases and of severe mental maladies. Physiologic therapeutics are employed, though we recognize all standard remedial agents.

You, no doubt, have some patients in mind who need to get away from the home environment, or to get out of the crowded city, and we certainly shall be appreciative if you will direct their attention our way. We know how difficult it is for the home physician to manage rheumatic patients, neurasthenics and those suffering from chronic digestive disturbances. Be assured that persons suffering with such troubles, when put under our thoroughly scientific, systematic regime can be wonderfully benefited, without losing any gratitude for the wisdom of the physician who sends them and outlines their needs.

By our equipment and our methods with graduated nurses, and well qualified physicians, we are prepared to put such patients on the healthward journey.

Fraternally yours,

F. A. LOOP, Supt.

Chicago Tuberculosis Institute.—Physicians more than any other class of professional or business men understand the significance of the old adage, "an ounce of prevention is worth a pound of cure." The aim of the medical practitioner of today, who takes pride in his profession, is to prevent rather than to cure disease. Modern science has demonstrated that many diseases, little understood a quarter of a century ago, are preventable, and physicians are trying to get at the root of disease by adopting preventive measures.

Tuberculosis is one of the most ravaging diseases with which modern civilization is afflicted. In the United States alone there are upwards of 1,000,000 persons suffering from this disease. The human and economic waste resulting from this source is almost incalculable and the splendid efforts that everywhere are being made to stamp out consumption are deserving of the earnest support of all who believe in humanity.

The sale of Red Cross Christmas seals offers a simple and practical method of assisting in this great crusade for a better world and a stronger and healthier race. Every cent contributed for Red Cross seals is spent to the best advantage to aid sufferers. The money raised in this manner goes to the maintenance of open air camps, sanatoria, dispensaries, visiting nurses and the distribution of millions of pieces of literature for the education of the public on the prevention, treatment and cure of tuberculosis.

Since the sale of Red Cross Christmas seals was adopted on a national scale in 1908, it has been the means of providing free treatment to thousands of sufferers who otherwise would have been neglected.

The little Red Cross stamp is doing a great work and physicians should be among its most ardent supporters.

The Chicago Tuberculosis Institute, which derives its revenue largely from the sale of Red Cross Christmas seals in Chicago and vicinity, is a tremendous force for good in this community. Largely through its splendid educational methods we have a municipal tuberculosis sanitarium in Chicago and the most complete system for the treatment of the disease that is to be found anywhere on the continent.

During the last twelve months the Committee on Factories of the Chicago Tuberculosis Institute has done excellent work in establishing a system of medical examination in large manufacturing plants. Factories and workshops giving employment to upwards of 100,000 men, women and girls in Chicago now have medical examination of their employes. Some of the employers make medical examination a requisite to securing employment.

Physicians can appreciate the importance of such a procedure. When tuberculosis is detected in its early stages, its treatment is comparatively simple and its cure certain, even in this climate. The reluctance of sufferers to make their affliction known until it is too late, is well known to every physician and the system of periodic examination overcomes this drawback.

The Chicago Tuberculosis Institute is also the pioneer in the inauguration of outdoor schools, and during the last several years maintained such schools during the summer seasons.

The Institute is engaged in an energetic campaign to improve the standard of care of advanced cases and is also directing all other activities designed to reduce the morbidity from the White Plague.

The medical profession, fully conversant with the ravages of this disease, is relied upon by the Chicago Tuberculosis Institute to give its moral encouragement and assistance in the sale of the Red Cross Seals, which form the chief income of the Institute. An advertisement and coupon of the Chicago Tuberculosis Institute will be found on page 33 of this issue.

Modern Sanitation.—The North American Review for November, 1912, contains a most interesting article on Modern Sanitation by Dr. Alvah H. Doty, late health officer of the port of New York. The author states that there is little or no authentic information regarding means employed in early times for the protection of public health, although the outbreaks of plague, cholera and typhus were terrible in their destruction. Incredible as the loss of life may seem the figures are reliable, as in the fourteenth century when the plague, under the name of Black Death, swept away one-quarter of the population of Western Europe, estimated at about twenty-five millions. Even in the last century an epidemic of typhus swept over Ireland that was nearly as destructive as those of earlier times.

Any attempt at restriction in those days was rendered futile by the common belief that the epidemic was a visitation of Providence. Today modern sanitation justifies the statement that such conditions will never occur again where proper sanitary measures can be enforced. It is of

interest to trace the means by which such a great change has been effected. The earliest recorded instance of quarantine is in Venice in the fourteenth century. In fact, the term quarantine is of Italian derivation and means literally a detention of forty days. One of the next steps toward modern sanitation was taken when Cardinal Gastaldi assumed charge of an outbreak of the plague in Rome in the seventeenth century. Of the means taken by him, two are still regarded as of utmost importance—careful isolation and cleanliness. The value of this work is shown by the fact that in Rome there were 14,000 deaths, while in Naples in the same period there were 300,000.

It was not, however, until 1880 that modern sanitation was placed upon a scientific basis. Pasteur and Koch presented absolute and conclusive evidence of the germ origin of infectious diseases. The list where the specific organism has been identified now includes tuberculosis, cholera, plague, typhoid fever, diphtheria and others.

Following this discovery came the investigation as to the means by which infective germs are transmitted from one person to another. This has resulted in proving the utter falseness of some of the most popular theories, one of which—the Fomite—is still prevalent. This belief, which has probably existed from earliest times, is that clothing, baggage, money, cargoes, etc., are the ordinary or common means of infection. Its almost universal acceptance has done much to militate against the successful treatment of outbreaks. Careful investigation by British sanitary officers into the importation of rags from the East, Egypt and India has shown not the slightest evidence that diseases were transmitted through them. Personal observations by the author in this country were productive of exactly the same result; neither has he obtained the least evidence that money was in any instance the carrier of infection, although the most careful investigation was made, particularly at the Treasury Department at Washington and in many banks where enormous amounts of filthy money were handled. Later researches, proving that insects and vermin play a most important part as agents in the transmission of diseases have greatly aided sanitation. The transmission of yellow fever by the "stegomyia" and malaria by the "anopheles" are instances in point. Bacteriological research, investigations along many other lines, and the experience of practical sanitarians have now furnished scientific proof as to the real media of infection—that it is persons and not things that transmit disease. Of course, no one doubts that occasionally there is a case of transmission by clothing or other material, but it is the usual or common means that must be combated by the sanitarian if he is to obtain results.

One of the most recent discoveries of great importance is the proved existence of carriers, that is, certain persons who may transmit disease without themselves presenting any evidence of it.

With all of these facts now in the possession of sanitary science, every effort should be made to use them in the better protection of the public health. This knowledge should do much to dispel the nervousness and fear with which the public regard many of these matters, and will also change very materially many unjust quarantine regulations

of the past. It is the hope of the sanitarians that now, with the help and co-operation of the public, many of the infectious diseases may be absolutely obliterated. Each house should constitute a sanitary unit. Great corporations should be under charge of competent sanitarians. The very first infection must be detected and controlled.

In conclusion the author says that co-operation on the part of the public in carrying out the dictates of modern sanitation by organized methods is not only sure to extend life and improve health, but will ultimately lead to the extermination of our at present actively destructive diseases.

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